84-761 (1)

No. 84-

IN THE

Supreme Court of the United States

OCTOBER TERM, 1984

DATA GENERAL CORPORATION,
Petitioner

v.

DIGIDYNE CORPORATION and FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,
Respondents

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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QUESTION PRESENTED

Whether a product's special attractiveness to some purchasers turns the packaging of that product with another into a tie-in, unlawful per se under the antitrust laws, even though the manufacturer lacks market power and the market as a whole is highly competitive.

DESIGNATION OF CORPORATE RELATIONSHIPS

Data General Corporation is not owned by any parent corporation.

Nippon-Data General Corporation is the subsidiary of Data General Corporation. Data General Corporation does not have an ownership interest in any other subsidiaries (excepting only wholly-owned subsidiaries).

Data General Corporation does not have any affiliates.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

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OPINIONS BELOW

The opinion of the court of appeals is reported at 734 F.2d 1336 (App. A, *infra,* 1a-20a). The opinion of the district court granting judgment n.o.v. is reported at 529 F. Supp. 801 (App. B, *infra,* 21a-55a). An earlier opinion granting partial summary judgment to respondents and setting the issues for trial is reported at 490 F. Supp. 1089 (App. C, *infra,* 57a-112a).

JURISDICTION

The opinion of the court of appeals was filed on June 7, 1984.[1] A petition for rehearing was denied and a suggestion of rehearing *en banc* rejected (App. D, *infra,* 113a-114a) on August 14, 1984. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1)(1982).

STATUTES INVOLVED

1. Section 1 of the Sherman Act, 15 U.S.C. § 1 (1982), provides in relevant part: " Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal . . . ."

2. Section 3 of the Clayton Act, 15 U.S.C. § 14 (1982), provides in relevant part: "It shall be unlawful for any person engaged in commerce . . . to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities, whether patented or unpatented . . . on the condition, agreement, or understanding that the lessee or purchaser thereof shall not use or deal in the goods, wares, merchandise, machinery, supplies, or other commodities of a competitor or competitors of the lessor or seller, where the effect of such lease, sale, or contract for sale or such condition, agreement, or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce."

STATEMENT

1. Data General Corporation ("DG") makes and sells general purpose computers. Most of its products are "minicomputers," a category that stands in size and speed somewhere between the "mainframe computers" that are larger and

[1] The Ninth Circuit does not issue a separate paper called a judgment, but advised petitioner that its judgment was entered on the basis of its opinion on its docket on June 7, 1984.

faster and the "microcomputers" that are smaller and slower. The bulk of its output is purchased by firms ("original equipment manufacturers" or "OEMs") that use DG's computers as components in other "smart" products, such as word processors, CAT scanners, and large photographic processing machines. DG also sells its products as stand-alone computers.

The brain of every computer is a central processing unit ("CPU"), which receives information from other parts of the machine, carries out the necessary calculations, and sends the processed information to a place for storage or retrieval. The CPU needs instructions telling it what calculations to perform. A CPU could do each task by waiting for detailed instructions on each portion of its chores, but this would be inefficient. Every CPU therefore comes with a set of built-in, shorthand instructions that tell it to perform both routine operations (such as multiplication) and more difficult ones (such as taking a natural logarithm). A CPU will recognize between 20 and 200 shorthand instructions (the "instruction set"), which serve as the internal language of that machine.

Almost any CPU can do almost any computational chore, but they are not equally efficient at all tasks. It is possible to design a machine that will perform certain operations especially efficiently, but often this means sacrificing speed on other operations. Firms design their central processing units so that they can perform quickly and easily the operations that the manufacturers think will be used most often by their customers. They create different CPUs for different kinds of tasks. Each one has its own strengths and weaknesses; each is unique; each has an instruction set designed to capitalize on the strengths and minimize the weaknesses of the physical design.

People who use computers find it tedious to write programs using the instruction set of the particular CPU. Each "computer" is a complex machine containing not only the CPU but also many related devices, such as memory, tapes, disks, video monitors and other components that make the computer useful. These must be coordinated. When people have a particular task (an "application" such as word processing), they write a

program ("software") and ask the computer to figure out how to carry out the necessary chores. It is helpful to have some intermediary among the CPU, the users and the other parts of the data processing system.

The intermediary for most computers is called an "operating system." *See* Denning & Brown, *Operating Systems*, SCIENTIFIC AMERICAN, Sept. 1984, at 94. The operating system tells the CPU how to manage all parts of the computer (including memory and output), using these resources efficiently. It "talks" to the CPU using the CPU's instruction set; it "talks" to people using a simplified language; it "talks" to the computer's peripherals (such as TV monitors) using codes they understand; and it "talks" to the applications software as well. Like any other language, it is evanescent. It is a system of symbols, not a physical entity. The CPU may move the symbols around within the computer. The operating system is an abstract language that knows how to use the CPU's instruction set to advantage.

2. One family of central processing units made by DG is called the "NOVA" family. DG designed a number of related CPUs that use a single instruction set, the "NOVA-instruction set." Data General also wrote an operating system that serves as one possible intermediary to its NOVA-instruction set CPUs. This operating system is called RDOS. It is not the only way to send instructions to NOVA-instruction set CPUs—a programmer could use the instruction set directly ("write in assembly language") or employ some other operating system. There are now at least twelve operating systems for NOVA-instruction set CPUs. RDOS has proved to be an efficient, useful operating system for many applications. A large number of DG's customers use CPUs from the NOVA family in conjunction with the RDOS operating system.

Respondents designed CPUs that use the same instruction set as the NOVA CPUs designed and manufactured by Data General. Respondents' machines are supposed to react to a particular instruction by doing exactly what a NOVA machine

would do with that instruction. Such machines are called "emulators" in the trade, for obvious reasons. They appear to the software as duplicates of the original machines.[2] Respondents could have designed any sort of CPU; most manufacturers elect to design CPUs with new instruction sets. Respondents chose to make CPUs that executed the instruction set of DG's machines. Data General has argued that they chose this path, and were able to follow it, because they stole DG's trade secrets. That allegation remains unresolved and plays no role in the litigation at this stage.

Every firm has a choice about how to provide an operating system. For example, when Apple Computer, Inc. introduced the Apple II computer, it wrote a new operating system for its machine (even though other operating systems were commercially available for the CPU Apple selected). When IBM introduced its PC, it contracted with Microsoft Corp., a commercial software developer, to write an operating system for the CPU IBM selected. Both Apple and IBM had operating systems available the day they introduced their computers. Respondents wrote operating systems for their CPUs. They also sought to make RDOS available for use on respondents' emulator CPUs.

Data General refused. DG licenses its copyrighted operating system in the United States only for use on its NOVA CPUs. Respondents say that, because potential customers could not obtain DG's RDOS for use with respondents' CPUs, respondents' machines were not successful in the market. They blame DG for this failure.

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[2] They need not be perfect duplicates. They may, for example, execute instructions in addition to those recognized by the CPU they emulate. But they seek to execute at least all of the instructions of the original CPU.

The appellation "emulator" does not imply that the CPUs have identical designs. They may use different circuitry or logical techniques to execute the same instructions. Thus they may be faster or slower than the machine they emulate, and they may have flaws that the emulated machine lacks (or may cure some of its flaws).

3. Respondents maintain that DG's refusal to license RDOS to people who do not buy DG's CPUs is a tie-in, unlawful per se under Section 1 of the Sherman Act and Section 3 of the Clayton Act. They portray the operating system RDOS as the "tying" product, contending that DG has the necessary market power in a market of computers using the NOVA-instruction set, because RDOS is copyrighted and subject to trade secret claims and because many customers find RDOS especially attractive. They seek an injunction compelling DG to license RDOS to people who do not buy DG's NOVA-instruction set CPUs, the "tied" product, and they also seek damages for lost profits.

The district court granted partial summary judgment to respondents (App. C, *infra,* 57a-112a). The court concluded that RDOS and the NOVA-instruction set CPUs are separate products because they may be manufactured and sold by separate firms. It rejected DG's argument that the two should be treated as one product because they are designed for use with each other and because operating systems have no function except to work with a CPU (*id.* at 71a-77a). The court held that DG ties these two products together, requiring customers to take NOVA-instruction set CPUs from DG in order to get the RDOS operating system (*id.* at 76a-77a). The court also rejected, as legally irrelevant, DG's argument that the package sale of RDOS and NOVA-instruction set CPUs is necessary or appropriate to obtain an economic return from research and development in software or to ensure proper functioning of its machines (*id.* at 74a-75a, 103a-107a).

The district court set the case for trial on the issue of DG's economic power (App. C, *infra,* 70a, 112a). The trial lasted 45 days and ended with a verdict by the jury in favor of respondents. Answering questions posed by the court, the jury defined the market as "all general purpose minicomputers and microprocessors" (App. B, *infra,* 34a), and it also defined a submarket of "operating software which run with CPUs using the NOVA instruction set" (*id.*). It apparently concluded that DG possesses market power in this latter market (*id.* at 36a-37a).

The court entered judgment for DG notwithstanding the verdict (*id.* at 22a-23a, 54a-55a). It found the market of "operating software which runs with CPUs using the NOVA instruction set" to be unsupportable as a matter of law because it excludes important competition from all other vendors of computers and data processing services (*id.* at 38a-40a, 49a-52a, 55a). It observed that customers shop for hardware-software solutions to real problems, not for the particular language a CPU uses to receive instructions. There is "a broad, dynamic, highly competitive market in which numerous vendors of microprocessors, minicomputers, and mainframes compete to offer original equipment manufacturers (OEMs) all purpose computer solutions designed to meet a variety of end-user needs" (*id.* at 38a).[3]

Looking at the larger market of "all general purpose minicomputers and microprocessors," the court held that no reasonable person could find that DG possesses power in such a market (*id.* at 40a-49a). It observed that respondents "have not even attempted to prove that [DG's] practices have appreciably restrained trade in this market" (*id.* at 49a) and concluded that they did not try because they could not have succeeded. DG is much smaller than rivals such as IBM and DEC, which offer competing products.

The district court reviewed the evidence and found that "[t]he evidence unmistakably proves . . . that Data General's prices are in fact competitive" (*id.* at 41a) and that DG does not possess power over any subset of its buyers because it sells to all customers at the same price, which must be a competitive price in order to attract new sales (*id.* at 41a-43a). Because DG lacks economic power, the court concluded, it is entitled to judgment. The district court also conditionally granted DG a new trial: "the verdict is contrary to the clear weight of the evidence or results in a miscarriage of justice" (*id.* at 55a & n.29).

[3] The court named IBM, Digital Equipment (DEC), Hewlett-Packard, Honeywell, Prime, Texas Instruments, Interdata, Wang, Computer Automation, General Automation, Intel, Zilog, Burroughs, NCR, and Microdata among DG's competitors in offering solutions to data processing problems (App. B, *infra,* 23a, 49a).

4. The court of appeals reversed (App. A, *infra*, 1a-20a). It did not disagree with the district court's assessment of the competitive situation. Indeed it was indifferent to whether DG could or did increase price above the level that would obtain in perfect competition. It chastised the district court for looking for power over price. It read the district court's opinion as holding that the plaintiff must offer "proof of power to fix the price of the tying product in the whole of the relevant market" (*id.* at 5a), and continued: "In this the district court erred. Possession by the seller of such monopoly power is sufficient to establish *per se* illegality, but it is not required." *Id.*

The Ninth Circuit concluded that DG's marketing strategy is unlawful per se because RDOS is copyrighted, because it is costly for other sellers to duplicate RDOS without infringing the copyright or using DG's trade secrets, and because RDOS is uniquely attractive to *some* of DG's customers. It stated: "we review the record not for what it may reveal as to [DG's] position in a defined market in which [DG's] RDOS was sold, but only to determine whether the jury reasonably could have concluded [that DG's] RDOS was sufficiently unique and desirable to an appreciable number of buyers to enable [DG] to force those buyers also to buy a substantial volume of [DG's] NOVA instruction set CPUs they would have preferred not to buy." (App. A, *infra*, 8a.) In other words, the Ninth Circuit looked not for power over price but for "forcing" alone; if RDOS is attractive enough to cause some buyers to purchase NOVA-instruction set CPUs from DG, then the link between the two is unlawful per se.[4]

[4] The court held that the tie violates both Section 1 of the Sherman Act and Section 3 of the Clayton Act. It did not suggest, however, that the two have different substantive standards, and we treat them as identical here. We therefore need not present the question whether Section 3—which covers "goods, wares, merchandise, machinery, supplies, or other commodities"—applies at all to this case, in which the tying product is intangible software. *See Ambook Enterprises v. Time Inc.*, 612 F.2d 604 (2d. Cir. 1979), *cert. dismissed*, 448 U.S. 914 (1980) (collecting authorities holding that Section 3 does not apply to intangible intellectual property).

The court of appeals found that the evidence in the record shows that RDOS is attractive to many customers. For some customers it is simply the best for the particular job. Other customers, having used RDOS in the past, may be "locked in" by the costs they would incur in rewriting their applications programs to work well with some other operating system. These advantages of RDOS, combined with its status as a copyrighted product with some trade secret protection, led the court of appeals to call RDOS "unique." Having equated uniqueness with market power, the Ninth Circuit held the tie unlawful per se (*id.* at 8a-14a).

The court also set aside the conditional grant of a new trial, stating that a "stringent standard applies" to grants of new trials based on the weight of evidence and that the jury's verdict was adequately supported here (*id.* at 19a-20a).

REASONS FOR GRANTING THE PETITION

1. The Ninth Circuit has held that the package sale of two products is unlawful per se whenever the tying product is "uniquely attractive" to *some* customers, and business rivals would find it costly to duplicate the package exactly. In the court of appeals' view, it is irrelevant that the market for both products is highly competitive and the firm selling the package cannot charge a price higher than the one that it would obtain in a perfectly competitive market. It is enough that the product be distinctive, and that some "appreciable number" of customers finds its distinctiveness important.

This holding affects the entire computer industry. Every firm sells a product a little different from every other firm's. Computers have myriad uses. In the computer business each firm tries to design a product that will do at least some things better than any other machine. Competition is dynamic, innovation ceaseless. The manufacturers compete to create hardware-software packages that they can sell as "solutions" to customers' problems. Each firm must combat a hundred other solutions in the market, each solution capable of doing the same

task. Yet under the holding of this case, if a firm makes a better mousetrap then it cannot use the practice (called "bundling" in the computer industry) of selling hardware and software together. Our best estimate is that the decision of the court of appeals affects at least 102 billion dollars of commerce every year based on 1983 revenues, invalidating practices used by most of the industry.[5]

This case affects all markets, not just computers. In and out of the computer business, firms strive to create novel solutions to old problems. Precisely because people have different needs and desires, product differentiation is the order of the day. Firms compete to design products that solve one of these needs a little better than the rest. They offer their products in competition with other methods—each a little different—of serving the same needs. *Some* customers will find one of these methods best, and they will purchase the product. They will testify that they bought the product because it was a little better (for their needs) than anything else. The Ninth Circuit would then find the purchase to be evidence of uniqueness, and uniqueness precludes tying.

Thus the issue in this case becomes: does a product's commercial success prevent its manufacturer from tying that product to another? Any successful product will have its adherents. Every differentiated product is "desirable to an appreciable number of buyers" (App. A, *infra,* 8a). Why else did they buy it? And whenever there is product differentiation, a would-be rival cannot copy the product for exactly the same price as the first seller. Differentiation breeds unique attractiveness and copying that is often costly. The market issue drops out entirely. Proof that the tying product was especially attractive thus establishes by definition every element of the claim—forcing, reduction in competition, damages. Any tie

[5] Archbold, *Fathoming the Industry,* DATAMATION, June 1, 1984, at 53, 54-55 (figs. 1-3). To the best of our knowledge, every manufacturer in the industry restricts the use of its operating systems to particular CPUs, with the exception of IBM (whose revenues are here excluded).

affecting a "not insubstantial volume of commerce" becomes unlawful per se.

2. The decision in this case is flatly inconsistent with ***Jefferson Parish Hospital District No. 2 v. Hyde,*** 104 S. Ct. 1551 (1984) ("***Hyde***"), and ***United States Steel Corp. v. Fortner Enterprises, Inc.,*** 429 U.S. 610 (1977) ("***Fortner II***"). The Ninth Circuit has held that market power is irrelevant. ***Hyde*** and ***Fortner II*** hold, to the contrary, that the plaintiff in a tying case must prove that the defendant possesses power over price, the ability to extract an overcharge or enforce terms that could not be charged or extracted in a competitive market.[6]

The Ninth Circuit saw tying arrangements as suspect, to be struck down on the smallest evidence that the seller exercised some influence over its customers (App. A, *infra,* 7a-8a). It treated "forcing" as the evil of ties. Not so. "Forcing" is the *definition* of a tie, not the harm. There is no violation in the absence of "anticompetitive forcing." Ties are not suspect. As the Court explained in *Hyde,* "there is nothing inherently anticompetitive about packaged sales. *Only* if [buyers] are forced to purchase [the tied product] as a result of the [seller's] market power would the arrangement have anticompetitive consequences." 104 S. Ct. at 1565 (emphasis added). In *Hyde* the Court reversed a judgment against a tie, concluding that even if the defendant had market power, that power was not of a type that could cause anticompetitive harm through tying. There was "forcing" in *Hyde* but not "anticompetitive forcing."

Fortner II likewise requires proof of market power as part of the plaintiff's case. ***See also NCAA v. Board of Regents of the University of Oklahoma,*** 104 S. Ct. 2948, 2962 n.26 (1984)

[6] The United States filed a brief as amicus curiae in the Ninth Circuit in support of rehearing, after petitioner had filed its petition. The Ninth Circuit declined to accept the United States' brief for filing. For the convenience of the Court, we reproduce the brief for the United States as App. E, *infra,* 115a-124a. Its principal argument was that the Ninth Circuit's decision "cannot be reconciled with *Hyde's* recognition that market analysis is always required" (*id.* at 116a-117a).

("*NCAA*"): "while the Court has spoken of a '*per se*' rule against tying arrangements, it has also recognized that tying may have procompetitive justifications that make it inappropriate to condemn without considerable market analysis." The Ninth Circuit has dispensed with market analysis. Every other decision after *Hyde* has recognized and carried out the necessary market analysis.[7] The decision here conflicts with those cases. It stands alone.

3. A tie could be "anticompetitive" within the meaning of *Hyde* only if it forced customers to purchase both products in order to fill their needs and exploited market power to raise price in the process. The Ninth Circuit read the latter requirement out of the law. It disregarded the former, too. As the Court put it in *Hyde*, "every refusal to sell two products separately cannot be said to restrain competition. If each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market" (104 S. Ct. at 1558). *See also Fortner II*, 429 U.S. at 620-22 (no problem if other sellers could duplicate the tied package for themselves and sell separately or together).

The court of appeals apparently thought that the "two products" in this case were RDOS and NOVA-instruction set

[7] *Jack Walters & Sons Corp. v. Morton Building, Inc.*, 737 F.2d 698 (7th Cir. 1984) (affirming summary judgment for defendant because plaintiff failed to show market power), *petition for cert. filed*, 53 U.S.L.W. 3242 (U.S. Sept. 14, 1984) (No. 84-405); *Spartan Grain & Mill Co. v. Ayers*, 735 F.2d 1284 (llth Cir. 1984) (reversing summary judgment for plaintiff and ordering judgment for defendant; holding that as a matter of law plaintiff failed to show how the factual uniqueness of the defendant's product created market power); *Konik v. Champlain Valley Physicians Hospital Medical Center*, 733 F.2d 1007 (2d Cir. 1984) (dictum), *cert. denied*, 53 U.S.L.W. 3269 (U.S. Oct. 9, 1984); *Systemized of New England, Inc. v. SCM, Inc.*, 732 F.2d 1030 (1st Cir. 1984) (defendant entitled to judgment because of lack of market power); *Domed Stadium Hotel, Inc. v. Holiday Inns, Inc.*, 732 F.2d 480 (5th Cir. 1984) (defendant entitled to judgment; even though defendant's product is factually unique, specially desirable, and may account for more than 20% of the market, this is insufficient to establish market power).

CPUs. If these are indeed products, then no one else can sell a package identical to DG's. We may suppose for now that no one can duplicate RDOS exactly; a rival must design another product to do the same thing as RDOS. This is irrelevant. The district court found—and there is no contrary evidence—that the nature of competition in the data processing business is that manufacturers design systems (App. B, *infra*, 38a-40a). Each combination of hardware and software is a little different, so that each has an advantage in some applications. These differences increase the satisfaction of customers. Firms compete not by duplicating each others' products but by finding new needs and improving on the ability to meet these.

Competition in such a market is rigorous. Consumers can shop for CPUs from one vendor, software from another vendor, and other equipment from a third vendor. All are available separately (App. B, *infra*, 38a-40a; App. C, *infra*, 72a-74a) as well as together. Firms specialize. Some make single products (such as operating systems for other firms' CPUs) and some sell packages. This is what competition is all about. Data processing consumers are sophisticated and shop carefully. They get what they want. The consumer is king. This is competition at work — competition among methods of filling customers' needs. Neither consumers nor vendors are forced to choose any particular method of proceeding. The multiplicity of options open to consumers prevents ties of this sort from being anticompetitive.

4. The package sale in this case is an example of the procompetitive ties of which the Court spoke in *Hyde* and *NCAA*. Because different customers have different needs, producers use different approaches to fill those needs. Some customers welcome the availability of packages assembled by producers. The producer-designed package works well together (at least the producer is responsible for seeing that it does), reducing the customer's risk and investment in learning which things work well with which others. Other customers, though, want the advantage of selecting each component separately, making

their own decisions with the associated costs and risks. The market functions well when some producers offer packages and others offer individual items to those who want them.

Packages may take many forms. Some producers conclude that customers desire prompt service. They may offer repair and delivery service on their own products—without being obliged to offer delivery and repair service for rivals' products. A legal requirement to service rivals' products would reduce the attractiveness of offering a product-service package in the first place, so producers would do less packaging. The same principle applies here. DG seeks to promote its computers by offering operating system software—without being compelled to make its rivals' lives easier by furnishing software for rivals' machines. If a seller has the privilege to limit to its own customers the benefits it achieves by packaging, it will design more and better products in consumers' interests.

The strategy is common. Consider the current rivalry in the microcomputer business. IBM offers its PC (Personal Computer) on an unbundled basis. You can get the CPU from IBM, the operating system from Microsoft, memory from Texas Instruments, disks from Memorex, and the TV monitor from Zenith. Apple, seeking to compete, has introduced the Macintosh. The Macintosh comes bundled. The CPU, memory, disks, and a TV monitor come in a single box. Apple sells an operating system as part of the price of the machine. You cannot buy the Macintosh without Apple's operating system, and so far as we know Apple will not license its operating system for use by other vendors.[8] The smaller seller chose bundling to make its product attractive in the market. IBM dropped its price in response, and consumers gained from the competition. DG, like Apple a smaller vendor in a competitive

[8] Apple's policy of refusing to license copyrighted instructions residing in its computers has led to two cases sustaining Apple's privilege under the copyright laws. *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984); *Apple Computer, Inc. v. Formula International Inc.*, 725 F.2d 521 (9th Cir. 1984).

market, does the same; the Ninth Circuit thinks this unlawful *per se*.

There is a second competitive benefit here. This tie helped DG recover the costs of software development in a market in which "knockoff" or "copycat" products and outright illegal copying of software impose substantial obstacles to investment in costly R&D. *See* App. B, *infra*, 45a-47a (recognizing the ease of copying). Methods that help inventors recover the costs of their endeavors encourage more R&D and thus are procompetitive. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974).

DG adopted the tie to increase the likelihood that it would be able to obtain a profit from its substantial investment in R&D. By licensing its operating system only in a package with its central processing unit, DG was able to use hardware sales to recover the software costs. Every NOVA processor represents the license of one unit of software, too. DG knows how many NOVA machines it sells and thus can tell how much use RDOS is receiving. Once it licenses the software for use on machines made by others, DG will be unable to tell whether those who use RDOS have paid for the services they receive. It is difficult to determine how many copies of RDOS have been made and used when thousands of buyers have the means to copy the software.[9] This Court has held that copyright holders may adopt effective methods, including bundling, to police their difficult-to-protect rights (*e.g.*, *Broadcast Music, Inc. v. CBS*, 441 U.S. 1, 8 n.13, 18-19 (1979)).[10]

[9] True, as the Ninth Circuit suggested (App. A, *infra*, 13a), a seller *could* adopt some other unspecified methods of policing as "less restrictive alternative[s]." But other methods are more costly and less effective, and hence less desirable to DG and society as a whole.

[10] We expect respondents to reply that bundling was not needed in this particular case to recover costs of developing software. But they pursued a *per se* case, and respondents cannot support the Ninth Circuit's refusal to *consider* these benefits by saying that the nature and extent of the benefits is a factual issue.

5. The court of appeals barely mentioned any of this. It concluded that condemnation flows automatically from the fact that RDOS is uniquely attractive to some customers and cannot be copied exactly. Because the nature of competition in this market is system against system, the court was simply looking in the wrong direction. It is quite irrelevant whether people can duplicate RDOS or NOVA-instruction set CPUs when there are so many other ways to create the same computing ability. Similarly, in the market for paperback fiction it is irrelevant that writers cannot copy existing detective stories. There are many variations on a theme, each sufficient to fill the demands of the market.[11] But for the sake of argument we assume that operating systems for NOVA-instruction set CPUs are a "product" and show that the Ninth Circuit still erred in the antitrust analysis.

a. The court of appeals emphasized that RDOS is distinctive. Nothing is *exactly* like it, and some customers prefer it. This is true of every product in almost every market (except, perhaps, wheat). It is also unimportant. In *Hyde* the hospital

[11] These competing systems ensure competition even if copyright and trade secret rules absolutely prevent respondents from creating an operating system for NOVA-instruction set CPUs. But of course they do not. Respondent Fairchild created its own operating system for its emulator CPU. This illustrates the proposition that copyright and trade secret rules do not preclude the independent development of writings and ideas. They preclude only copying, not independent creation. *See Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 263-66 (1979) (trade secret law); *Mazer v. Stein*, 347 U.S. 201, 217 (1954) (only the expression, not the idea, may be copyrighted). The district court found that technological advances enable DG's rivals to design such packages at *lower* costs than DG incurred in designing RDOS (App. B, *infra*, 47a). So although it is true, as the court of appeals observed, that DG's rivals would incur high costs in designing a new operating system (App. A, *infra*, 10a), this does not establish market power. The question is not whether rivals incur costs—they have to build plants and buy materials, too—but whether something about DG's packaging causes rivals' costs to exceed DG's costs, creating a barrier to entry. The Ninth Circuit did not find and could not have found that rivals' costs of designing an operating system for NOVA-instruction set CPUs would exceed DG's costs. No "presumption" of power can survive the undisputed findings of the district court.

was uniquely desirable to some patients (those who lived nearby or those who strongly preferred its facilities). Rivals could not duplicate these advantages try as they may, yet the Court held that this did not amount to the sort of market power that makes tying unlawful. In *Fortner II* it was undisputed that U.S. Steel's credit terms were unique and desirable. Low-interest credit, the tying product in *Fortner II*, is costly to duplicate, just as RDOS is costly to duplicate. Yet in *Fortner II* the Court held factual uniqueness insufficient. Decisions of several lower courts after *Hyde* reject "factual uniqueness" arguments, and these decisions all conflict with the Ninth Circuit[12] which emphasized the language of some of this Court's cases from the 1960s. But as this Court held in *Fortner II*, the language of those cases may no longer be considered authoritative.[13]

b. The preferences of some customers do not give DG power. *All* differentiated products are especially attractive to

[12] *See Spartan Grain, supra* note 7 (unique package of chickens and feed); *Domed Stadium Hotel, supra* note 7 (package including unique toll-free reservations system). These cases hold that factual uniqueness creates a presumption of market power *only* if the rival cannot offer a similar package for the same cost the defendant incurred in creating it. The district court found that respondents could write operating systems for less than the cost DG incurred in writing RDOS. *See* App. B, *infra*, 47a. *See also supra* note 11.

[13] *E.g.*, App. A, *infra*, 5a-6a, 16a, emphasizing the language of *United States v. Loew's Inc.*, 371 U.S. 38 (1962). The plaintiff in *Fortner II* had relied on the same language. Language in several cases decided before *Fortner II* "could be read to make actual market power irrelevant." Dam, *Fortner Enterprises v. United States Steel: "Neither a Borrower, Nor a Lender Be,"* 1969 Sup. Ct. Rev. 1, 26. But the Court in *Fortner II*, stating that Professor (now Deputy Secretary of State) Dam had "correctly analyzed the burden of proof," quoted another portion of his article: "[*M*]*arket power in the sense of power over price must still exist* .... Thus, despite the broad language available for quotation in later cases, the treatment of the law on market power [in *Fortner Enterprises v. United States Steel Corp.*, 394 U.S. 495 (1969) ("*Fortner I*")] is on close reading not only consonant with the precedents but in some ways less far-reaching than *Northern Pacific* [*Northern Pacific Ry. v. United States*, 356 U.S. 1 (1958)] and *Loew's*" (quoted in *Fortner II*, 429 U.S. at 620 n.13) (emphasis added). The "broad language" of *Loew's* is the cornerstone of the Ninth Circuit's opinion.

some buyers; why else do they buy? But this is not a source of market power. If the manufacturer sells to other customers, who are almost indifferent between its products and those of competitors, it must set the competitive price in order to attract business. The district court found that DG sells to all customers at the same price (App. B, *infra,* 42a). This price—set by DG's sales to its ***marginal*** customers, those on the fence between DG's products and those of DG's rivals—makes it irrelevant that some customers strongly prefer DG's goods. The court of appeals simply ignored this point, though it was a centerpiece of the district court's findings.

c. For the same reason, it is irrelevant that some customers are "locked in" and that other customers have market power on resale. First, the customers chose DG's wares knowing of DG's policy of bundling hardware and operating system software; they subjected themselves to the lock-in effect with knowledge, while other vendors sold unbundled systems. They chose DG ex ante because DG made the best price-quality offer, and hence it is hard to see how DG's policies could be said to exploit them. As in *Fortner II,* 429 U.S. at 620-22, the package sale shows the success of a particular competitive strategy. Several witnesses testified in essence that they were trapped and could not move to other products. In *Fortner II,* the plaintiff was trapped because there were no identical packages. The Court found that irrelevant there, and the evidence is equally irrelevant here.

Second, most locked-in customers sell in competitition with other vendors who obtain their products from other sources. *See supra* note 3. DG cannot exploit its allegedly locked-in customers without driving them out of business. The district court found this to be an indisputable fact (App. B, *infra,* 42a). It is easy to see why. If Cargill could buy wheat only from three farmers in Minnesota, that lock-in would not give the farmers power to raise the price above the competitive level. Since Cargill is a middleman, it simply loses business unless it has a supply available at the same price as non-locked-in rivals. Most of DG's customers also are middlemen (OEMs) who buy computer parts and repackage them as computational systems.

Thus the district court's factual finding that "lock-in" confers no power is dispositive.

6. This case deserves plenary review for the reasons we have spelled out. The holding condemns tying under a per se analysis for *every* differentiated product. It will affect the entire economy, depriving consumers of the benefits that package selling often brings. The case is important, and it is wrong. We have shown how it conflicts with *Fortner II* and *Hyde* on the question of market power, and how it conflicts with decisions of several lower courts on the definition of "uniqueness." The decision creates or aggravates at least three additional conflicts.

a. Several courts have held that an indispensible part of the plaintiff's burden in a tying case is proof that the tie elevated the price of the package above the competitive price of the components sold separately. *E.g., Kypta v. McDonald's Corp.,* 671 F.2d 1282 (llth Cir.), *cert. denied,* 459 U.S. 857 (1982). Such a requirement follows from *Fortner II,* because when the package price is equal to or less than the price of separate components ("cheap financing in order to sell expensive houses", 429 U.S. at 622), the tie is a competitive strategy and market power is missing. The requirement is reinforced by *Hyde,* which mentioned in several places the lack of evidence that the hospital's tie raised price or exploited power, 104 S. Ct. at 1567 n.47, 1568 n.52, and by *NCAA,* which emphasized that power over price is the focus of antitrust. The Ninth Circuit's decision conflicts with *Kypta* because, as the Ninth Circuit saw things, DG should be held liable "[e]ven assuming defendant's package of RDOS and defendant's NOVA instruction set CPU was competitively priced" (App. A, *infra,* 18a).

b. The court of appeals concentrated on DG's power over its own products and customers. This is inconsistent with a long line of cases holding that substitutes in end use—not just substitutes in production—must be included in the market to assess power. *E.g., Spectrofuge Corp. v. Beckman Instruments, Inc.,* 575 F.2d 256, 277-83 (5th Cir. 1978), *cert. denied,* 440

U.S. 939 (1979); *Telex Corp. v. IBM,* 510 F.2d 894 (10th Cir.), *cert. dismissed,* 423 U.S. 802 (1975), *see NCAA, supra,* 104 S. Ct. at 2966 (describing the test as "whether there are other products that are reasonably substitutable for" the defendant's). It is undisputed that other hardware-software combinations do the same computational tasks as the package that DG sells. The district court found that competition from these combinations saps DG of any power over price. As the Court held in *NCAA,* the essential question of market definition is whether those who sell a certain product have power over price; no power, no market.[14] These other combinations thus must be considered.

It is always possible to do what the Ninth Circuit did here—to show that a given product has attractive features and thus dedicated customers. This cannot be the criterion of market power, however, unless every vendor of a branded product is to be defined as possessing market power and every branded product is to be defined as being sold in a separate market, thus creating a monopoly. Every vendor of a branded product has a little market power; this flows from product differentiation. The same product differentiation confers great benefits on consumers. A world of different products is more likely to contain one that just meets each buyer's needs. Antitrust should respond by guaranteeing competition of one product against another. *See Copperweld Corp. v. Independence Tube Corp.,* 104 S. Ct. 2731, 2740-41 (1984). A set of legal rules that treats every product as a market, and treats even small sellers as monopolists (as the Ninth Circuit has done), ultimately leads to less product differentiation with consequent losses to consumers.

c. In assessing claims of market power over locked-in customers, the Ninth Circuit viewed the situation ex post. That is, it asked whether DG had power, *given* that some customers were locked-in. We have argued above that it supplied the wrong answer to this ex post question. But ex post is the wrong perspective. Because customers knew when they bought DG's products that they would become locked in, yet chose DG's tied package over rivals' products, the appropriate question is whether DG possessed or exercised power at the time of the initial sale. The Second Circuit has held that the appropriate time for analysis is the occasion of the initial purchase. *CBS v. ASCAP,* 620 F.2d 930 (2d Cir. 1980), *cert. denied,* 450 U.S. 970 (1981). The decision here conflicts in principle with that of the Second Circuit.

[14] This also shows why the district court properly set aside the jury's "submarket" of operating systems capable of running on NOVA-instruction set CPUs. The defined "submarket" does not demonstrate that DG possesses power over price.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted,

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APPENDICES

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Phillip B. Winberry
Clerk, U.S. Court of Appeals

APPENDIX A

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,

Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,

Defendant-Appellee.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,

Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,

Defendant-Appellee.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,

Plaintiffs-Appellees,

v.

DATA GENERAL CORPORATION,

Defendant-Appellant.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,

Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,

Defendant-Appellee.

Nos. 81-4628, 81-4667, 81-4671 and 82-4162.

Appeal from the United States District Court for the Northern District of California (M.D.L. 369)

Before BROWNING, Chief Judge, PECK* and ALARCON, Circuit Judges.

BROWNING, Chief Judge:

The issue presented for review is whether Data General's refusal to license its NOVA operating system software except to purchasers of its NOVA central processing units (CPUs) is an unlawful tying arrangement under section 1 of the Sherman Act, 15 U.S.C. § 1 (1976) and section 3 of the Clayton Act, 15 U.S.C. § 14 (1976). We conclude that it is.

I.

Defendant Data General manufactures a computer system known as NOVA. The system consists of a NOVA CPU designed to perform a particular "instruction set" or group of tasks, and a copyrighted NOVA operating system called RDOS containing the basic commands for operation of the system. Not all operating systems work with all CPUs. Plaintiffs produce emulator NOVA CPUs designed to perform the NOVA instruction set and thus to make use of defendant's RDOS.

Data General refuses to license its RDOS to anyone who does not also purchase its NOVA CPU. Plaintiffs allege that this constitutes an unlawful tying arrangement; the defendant's RDOS being the tying product, the NOVA instruction set CPU being the tied product.

Plaintiffs filed a number of actions alleging violations of section 1 of the Sherman Act and section 3 of the Clayton Act. The actions were consolidated. The issues of liability and

* Honorable John W. Peck, Senior Judge, United States Court of Appeals for the Sixth Circuit, sitting by designation.

damages were segregated for trial. This appeal is from a judgment on liability.

After extensive discovery, the parties filed cross-motions for summary judgment. The district court denied the motions, but found certain facts to be uncontroverted under Fed.R.Civ.P. 56(d). Trial, limited to the issue of defendant's economic power, resulted in a jury verdict for plaintiffs. Defendant's motion for judgment n.o.v. or for a new trial was granted. Plaintiffs appealed.

II.

A tying arrangement is illegal if it is shown to restrain competition unreasonably or is illegal *per se*, without such a showing, if certain prerequisites are met. *Fortner Enterprises v. U.S. Steel Corp.*, 394 U.S. 495, 498-500, 89 S. Ct. 1252, 1256-1257, 22 L.Ed.2d 495 (1969) *(Fortner I)*. The prerequisites of *per se* illegality are: (1) separate products, the purchase of one (tying product) being conditioned on purchase of the other (tied product); (2) sufficient economic power with respect to the tying product to restrain competition appreciably in the tied product; and (3) an effect upon a substantial amount of commerce in the tied product. *Fortner I*, 394 U.S. at 499, 89 S. Ct. at 1256, *Moore v. Jas. H. Matthews & Co.*, 550 F.2d 1207, 1212 (9th Cir. 1977). These prerequisites were satisfied in this case. We therefore do not consider whether competition was in fact unreasonably restrained.

The district court properly granted summary judgment on the first and third of the required elements of a *per se* violation, holding that on the undisputed facts the NOVA instruction set CPU and defendant's RDOS are separate products and the volume of commerce in NOVA instruction set CPUs tied to the purchase of defendant's RDOS is substantial. *In re Data General Corp. Antitrust Litigation*, 490 F. Supp. 1089, 1104-1107, 1116-1117 (N.D. Cal. 1980).

We adopt the district court's reasoning on these issues, adding that the court's analysis of defendant's "single product"

claim is supported by the Supreme Court's recent discussion in *Jefferson Parish Hospital District No. 2 v. Hyde*, ___ U.S. ___, 104 S. Ct. 1551, 1561-65, 80 L.Ed.2d 2 (1984). The undisputed facts summarized in the district court's opinion establish that a demand existed for NOVA instruction set CPUs separate from defendant's RDOS, and that each element of the NOVA computer system could have been provided separately and selected separately by customers if defendant had not compelled purchasers to take both. *See also Klamath-Lake Pharmaceutical Association v. Klamath Medical Service Bureau*, 701 F.2d 1276, 1289 (9th Cir. 1983).[1]

The remaining element necessary to establish a *per se* violation—defendant's possession of sufficient economic power with respect to the tying product, defendant's RDOS—was tried to a jury and resolved in plaintiffs' favor. The district court erred in setting aside this verdict or, alternatively, ordering a new trial.

III.

One of the purposes of a *per se* rule is to avoid an "incredibly complicated and prolonged economic investigation . . . to determine at large whether a particular restraint has been unreasonable." *Northern Pacific Railway Co. v. United States*, 356 U.S. 1, 5, 78 S. Ct. 514, 518, 2 L.Ed.2d 545 (1958). *See also Jefferson Parish Hospital*, 104 S. Ct. at 1560, n.25. Although not requiring as extensive an inquiry as would be necessary to determine whether the tie-in violated the general standard of reasonableness, the district court held that plaintiffs "could not recover on the alleged tie-ins unless they identified and proved the relevant market for the tying and tied prod-

[1] The district court also granted summary judgment for plaintiffs on the issues of (1) whether plaintiffs were damaged in fact by the tie-in (490 F. Supp. at 1117-19) and (2) whether the tie-ins were justified by legitimate business considerations (*id.* at 1120-24). We agree with the court's rulings on these issues and the grounds upon which the court based them.

ucts." *In re Data General Corp. Antitrust Litigation*, 529 F. Supp. 801, 809 (N.D. Cal. 1981). The trial that followed "focused upon the definition of the relevant markets" for the two products, which the Court characterized as the "critical issue," (*id.* at 806) and consumed forty-five days. *Id.* at 804.

The district court recognized that detailed market analysis was not required in a *per se* tying case prior to *United States Steel Corp. v. Fortner Enterprises, Inc.*, 429 U.S. 610, 97 S. Ct. 861, 51 L.Ed.2d 80 (1977) (*Fortner II*), but read that opinion as rejecting this approach in favor of a requirement of "some degree of market analysis even in a per se case." 529 F. Supp. at 808. The court relied particularly upon language in *Fortner II*, which states the question to be:

> whether the seller has the power, within the market for the tying product, to raise prices or to require purchasers to accept burdensome terms that could not be exacted in a completely competitive market. In short, the question is whether the seller has some advantage not shared by his competitors in the market for the tying product.

429 U.S. at 620, 97 S. Ct. at 867.

From the district court's analysis of the asserted deficiencies in plaintiffs' proof, it appears the court read this statement as requiring proof of power to fix the price of the tying product in the whole of the relevant market as defined by the inquiry described in *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 76 S. Ct. 994, 100 L.Ed. 1264 (1956), a monopolization case. In this the district court erred. Possession by the seller of such monopoly power is sufficient to establish *per se* illegality, but it is not required.

As the Supreme Court said in *United States v. Loew's, Inc.*, 371 U.S. 38, 45, 83 S. Ct. 97, 102, 9 L.Ed.2d 11 (1962):

> Market dominance—some power to control price and to exclude competition—is by no means the only test of whether the seller has the requisite economic power. Even

absent a showing of market dominance, the crucial economic power may be inferred from the tying product's desirability to consumers or from uniqueness in its attributes.[4]

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[4] Since the requisite economic power may be found on the basis of either uniqueness or consumer appeal, and since market dominance in the present context does not necessitate a demonstration of market power in the sense of §2 of the Sherman Act, it should seldom be necessary in a tie-in sale case to embark upon a full-scale factual inquiry into the scope of the relevant market for the tying product and into the corollary problem of the seller's percentage share in that market. This is even more obviously true when the tying product is patented or copyrighted, in which case, as appears in greater detail below, sufficiency of economic power is presumed.

This position was re-affirmed in the *Fortner* cases. In *Fortner I*:

> The standard of "sufficient economic power" does not, as the District Court held, require that the defendant have a monopoly or even a dominant position throughout the market for the tying product. Our tie-in cases have made unmistakably clear that the economic power over the tying product can be sufficient even though the power falls far short of dominance and *even though the power exists only with respect to some of the buyers in the market.*
>
> * * * *
>
> . . . [T]he presence of any appreciable restraint on competition provides a sufficient reason for invalidating the tie. Such appreciable restraint results *whenever the seller can exert some power over some of the buyers in the market, even if his power is not complete over them and over all other buyers in the market* . . . . [D]espite the freedom of some or many buyers from the seller's power, other buyers—whether few or many, whether scattered throughout the market or part of some group within the market—can be forced to accept the higher price because of their stronger preferences for the product, and the seller could therefore choose instead to force them to accept a tying

> arrangement that would prevent free competition for their patronage in the market for the tied product. Accordingly, the proper focus of concern is whether the seller has the power to raise prices, or impose other burdensome terms such as a tie-in, *with respect to any appreciable number of buyers within the market.*

394 U.S. at 502-03, 89 S. Ct. at 1258-59 (emphasis added).

In *Fortner II* the Court reiterated that its prior decisions "do not require that the defendant have a monopoly or even a dominant position throughout the market for a tying market," 429 U.S. at 620, 97 S. Ct. at 867, and approved a commentator's summary of the holding in *Fortner I*: "Whenever there are *some* buyers who find a seller's product uniquely attractive, and are therefore willing to pay a premium above the price of its nearest substitute, the seller has the opportunity to impose a tie to some other good." 429 U.S. at 620, n.14, 97 S. Ct. at 868, n.14. (quoting Note, *The Logic of Foreclosure: Tie-In Doctrine after Fortner v. U.S. Steel,* 79 Yale L.J. 86, 93-94 (1969) (emphasis added). The language from *Fortner II* relied upon by the district court is not inconsistent with this interpretation; it required only "power, within the market for the tying product, to raise prices or to require purchasers to accept burdensome terms that could not be exacted in a *completely* competitive market." 429 U.S. at 620, 97 S. Ct. at 867 (emphasis added).

In its most recent decision on the question (filed after the ruling of the district court in this case) the Supreme Court again made it clear that a tying arrangement is illegal *per se* if the seller of the tying product has the capacity to force some buyers to purchase a tied product they do not want or would have preferred to purchase elsewhere. When such forcing occurs "competition on the merits in the market for the tied item is restrained." *Jefferson Parish Hospital,* ___ U. S. ___, 104 S. Ct. at 1558 (1984). Thus, what is required in a *per se* case is not power over the whole market for the tying product, but only, as the Court said, a "type of market power [that] has sometimes been referred to as 'leverage . . . defined here as a supplier's ability to induce his customers for one product to buy a second

product from him that would not be purchased solely on the merit of that second product.' " *Id.* at 1559, n.20, quoting V.P. Areeda & D. Turner, *Antitrust Law,* ¶ 1134a at 202 (1980). "[We] have condemned tying arrangements", the Court said, "when the seller has some special ability—usually called 'market power'—to force a purchaser to do something that he would not do in a competitive market." *Id.* at 1559.

Nor is a restraint on competition that is substantial in terms of the entire market for the tied product required. "If only a single purchaser were 'forced' with respect to the purchase of a tied item, the resultant impact on competition would not be sufficient to warrant the concern of antitrust law." *Id.* at 1560. Beyond that, however, it need only appear that "a substantial volume of commerce is foreclosed," *id.,* which the court earlier defined as "substantial enough in terms of dollar-volume so as not to be merely *de minimis." Fortner I* at 501, 89 S. Ct. at 1258. *See also Moore v. Jas. H. Matthews & Co.,* 550 F.2d at 1216.

In accordance with these holdings, we review the record not for what it may reveal as to defendant's position in a defined market in which defendant's RDOS was sold, but only to determine whether the jury reasonably could have concluded defendant's RDOS was sufficiently unique and desirable to an appreciable number of buyers to enable defendant to force those buyers also to buy a substantial volume of defendant's NOVA instruction set CPUs they would have preferred not to buy.

IV.

There was abundant evidence that defendant's RDOS was distinctive and particularly desirable to a substantial number of buyers, and could not be readily produced by other sellers. There was also substantial evidence that defendant's insistence upon licensing its RDOS only to purchasers of defendant's NOVA instruction set CPU, led buyers to purchase defendant's NOVA CPUs who would not have bought them or would have bought them elsewhere absent the tying requirement.

Although expressing some doubt as to the sufficiency of the evidence, the district court assumed defendant's RDOS was superior to competing operating systems and was viewed as uniquely desirable by buyers. 529 F. Supp. at 816. We do not share the court's hesitancy about the adequacy of the proof of the strong preference of many customers for RDOS. It was a most popular product. Experts, customers and even competitors testified to its many advantages over competitive products.[2] Defendant's own officials expressed the same opinion in pre-litigation documents.

Defendant's RDOS has copyright protection. Defendant also claimed the production of RDOS required use of defendant's trade secrets. The RDOS copyright established both the distinctiveness of RDOS and a legal bar to its reproduction by competitors. "The requisite economic power is presumed when the tying product is patented or copyrighted." *United States v. Loew's, Inc.,* 371 U.S. at 45, 83 S. Ct. at 102. The copyright confers upon defendant "some advantages not shared by his competitors in the market for the tying product." *Fortner II,* 429 U.S. at 620, 97 S. Ct. at 868: "[T]he copyright monopolies in *United States v. Paramount Pictures, Inc.,* 334 U.S. 131 [68 S. Ct. 915, 92 L.Ed. 1260] and *United States v. Loew's Inc.,* 371 U.S. 38 [83 S. Ct. 97, 9 L.Ed.2d 11] . . . represented tying products that the Court regarded as sufficiently unique to give rise to a presumption of economic power." 429 U.S. at 619, 97 S. Ct. at 867. "[P]er se prohibition is appropriate if anticompetitive forcing is likely. For example, if the government has granted the seller a patent or similar monopoly over a product, it is fair to presume that the inability to buy the product elsewhere gives the seller market power." *Jefferson Parish Hospital,* 104 S. Ct. at 1560. *See also Moore v. Jas. H. Matthews & Co.,* 550 F.2d at 1215-16.

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[2] There was documentary and oral testimony that RDOS was the best in the industry, the most comprehensive, compatible, field proven, and rapid. One customer testified, for example, that tests showed RDOS ran approximately four times faster than any similarly-priced system. Another witness called it "the only full service operating system available for the NOVA."

There is abundant evidence, including testimony of defendant's own executives, customers, and plaintiffs' expert witnesses, that defendant's RDOS could not be reproduced without infringing defendant's copyright and utilizing defendant's trade secrets.[3] Defendant vigorously pursued those who assertedly violated defendant's proprietary rights. Additionally, there was evidence that creating and testing a compatible system would require millions of dollars and years of effort. One of defendant's officers testified that the passage of the time required to reproduce RDOS would render the completed software obsolete.

The power to coerce that RDOS gave the defendant was enhanced by the fact that many of defendant's customers were "locked in" to the use of RDOS. Briefly, defendant sells RDOS and NOVA CPUs primarily to original equipment manufacturers (OEMs) who combine them with application software (a set of instructions that allows the system to accomplish a particular task) to create a complete computer system for resale. Application system software for particular uses is developed by OEMs at substantial expense. Once developed, application software for a particular use may be used by an OEM in producing any number of computer systems for that use for resale to different customers. However, application software is designed to function only with a particular operating system. OEMs who construct their application software to function with defendant's RDOS therefore must purchase an RDOS for each computer system they assemble using that application software. Because of the tying condition, they also must purchase one of defendant's NOVA instruction set CPU for each such computer system they sell.

An OEM can free itself from this "lock in" only by abandoning its application software compatible with defendant's RDOS, in which it has a substantial investment, or

[3] One of defendant's officers admitted it would be impossible to develop operating system software performing all the functions of defendant's RDOS without violating defendant's copyright and utilizing its trade secrets.

converting the software so that it may be used with another operating system. There was abundant testimony that conversion was not economically feasible.[4]

The defendant argues that "lock-in" is irrelevant in determining its market power because OEMs are aware of the tie when they select an operating system for the computer system they are assembling. At that point, defendant argues, the OEM has made no investment in application software and, as a result, chooses freely among competing systems. 529 F. Supp. at 821. This characterization of the market is not accurate. As the evidence in this case establishes, the initial choice is not free of forcing. Defendant's operating system has been shown to be unique as a matter of law and distinctively attractive as a matter of fact. Defendant's initial leverage is magnified by the lock-in. By 1979, 93 percent of defendant's NOVA CPU sales were made to locked-in customers. These buyers were not only forced to buy defendant's CPUs initially to acquire the operating system they found most attractive, they were thereafter forced to buy defendant's CPUs for their subsequent needs in order to acquire the only operating system they could economically use. Not even a decision by CPU manufacturers to broaden their base and compete in the operating system market would have alleviated the problem, for the locked-in customers were not free to choose among competing operating systems. RDOS was the only operating system that would allow them to realize the benefit of their investment in application software, an investment that in some cases totalled millions of dollars.

[4] Defendant's former marketing manager could recall no instance in which an existing OEM customer had abandoned defendant's equipment and switched to a new supplier. Competitors and customers of defendant testified that conversion was virtually impossible without a complete rewriting of application software. One OEM estimated the cost of conversion to be 90 percent of the original development costs. Another ruled out the possibility of changing operating systems because "it would simply take too long to change all the software that we have, all the software on hand. We can't shut down the operation we have going . . . ." And another, "it is just not possible to do in our environment because it would just take forever."

OEM testimony confirmed defendant's potential power to coerce arising from the lock-in. For example, one OEM witness testified "[w]ithout [the RDOS operating system] I can't operate"; and another: "economically I was in a position where I had to use RDOS. I had no choice at that point."

The power arising from the special attraction of RDOS, coupled with the copyright protection, the trade secret barrier, and the lock-in, was evidenced by defendant's minimum equipment configuration (MEC) program. To obtain defendant's RDOS all licensees were required to purchase not only defendant's CPU but also a set quantity of other peripheral hardware, or pay a program license charge. Defendant's national accounts manager accurately referred to the charge as a "penalty." Customers testified they were forced to buy peripherals from defendant they otherwise would not have purchased. An OEM testified he purchased defendant's fixed disc because he "had to . . . or pay a $5,000 fine." He also testified he could have bought a superior disc drive for his purposes from another source at half the price. Another customer testified "we've had to take equipment that we either couldn't use, or equipment that, for one reason or another, might, in our opinion, have been best—best obtained from another source." Still another OEM called the MEC "arbitrary" because it required the purchase of "items of hardware specified in the Minimum Equipment Configuration for certain products that have no functional bearing or are not required, or not used necessarily by the programs themselves." Defendant's senior vice-president testified the complaints were received from customers about the MEC program "all the time."

Defendant retained the MEC program despite buyer resistance because, as defendant's president testified, if required to forgo the program defendant would have suffered a loss in revenues. The tie-in of RDOS to defendant's NOVA instruction set CPU was an equally conscious exercise of economic power in one market to gain an advantage in others. As one of defendant's managers wrote in an intra-company memorandum, "[p]rotection from knock-off products still lies in software licensing restrictions."

The district court properly rejected defendant's argument, vigorously renewed in this court, "that it must bundle its software together with its CPUs in order to recover its substantial investment in software research and development," (490 F. Supp. at 1121), and that "it would be unfair to permit emulator-CPU manufacturers to reap the benefits of [defendant's] software [research and development] when they sell their competing CPUs for use with [defendant's] software." 490 F. Supp. at 1121-22.

Defendant's president testified the tie was devised to ensure recovery of RDOS development costs. He testified the decision to tie was made after a competitive manufacturer of NOVA emulator CPUs requested permission to use RDOS. Rather than sell the software separately at a price that would reflect research and development, defendant chose to restrict availability to its own CPU customers, thus restricting competition for the tied product. As the district court said, "Recovery of investment costs has been explicitly excluded from the narrowly-construed exceptions to the *per se* rule against tie-ins." *Id.* at 1122. Defendant "has not shown, nor has it raised a genuine issue of fact with respect to its ability to show at trial, that it is any less capable than was Jerrold Electronics [see *United States v. Jerrold Electronics Corp.*, 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567, 81 S. Ct. 755, 5 L.Ed.2d 806 (1961)] of adopting the less restrictive alternative of restructured prices in order to recoup its investment costs and maintain its incentive for further innovation." *Id.* at 1122.

If the tie were allowed, competing manufacturers of CPUs would be forced

> not only to match existing sellers of the tied product in price and quality, but to offset the attraction of the tying product itself. Even if this is possible through simultaneous entry into production of the tying product, entry into both markets is significantly more expensive than simply entry into the tied market . . . .

Jefferson Parish Hospital, 104 S. Ct. at 1558 n.19 (quoting *Fortner I,* 394 U.S. at 513, 89 S. Ct. at 1263 (White, J., dissenting)). In short, defendant must recover the cost of RDOS development by pricing RDOS appropriately, not by tying it to a separate product.

Evidence regarding the potential sources of power with respect to RDOS (copyright, trade secret, and "lock-in"), was submitted to the jury under appropriate instructions. The jury found as a fact that defendant possessed and used the power by means of the tying arrangement to appreciably restrain competition in the market for NOVA instruction set CPUs. The evidence outlined above fully supported the jury's verdict.

V.

Most, although not all, of the trial court's reasons for setting aside the verdict are traceable to the court's view that the legality of a tying arrangement must be tested by the seller's economic power throughout the market for the tying product, and by the relative substantiality of the restraint on competition in the tied product market considered as a whole.

As we have said, the trial court assumed customers regarded RDOS as "uniquely desirable and that it in fact possesses various features which render it superior to other software," but concluded that plaintiffs had failed to prove that defendant's "competitors were prevented from developing functionally equivalent software." 529 F. Supp. at 816. Conceding that the copyright on RDOS and the trade secrets involved in its creation precluded development by defendant's competitors of "compatible" software, the court held plaintiffs had failed to prove the effect of defendant's copyright and secrets on the development of software "comparable" to RDOS. *Id.* at 816-17.

The court erroneously imposed the burden of proof on plaintiffs. The RDOS copyright created a presumption of economic power sufficient to render the tying arrangement illegal *per se.*[5] The burden to rebut the presumption shifted to defendant.

More basically, the court was misled by its conception that power throughout the product market for the tying product was required. Earlier in its opinion the court indicated the relevant market must be defined to permit the jury to determine whether defendant's competitors "were prevented from developing competitive software." *Id.* at 809. The court continued:

> The focus in defining a relevant product market must be upon recognizing those firms and products which present relevant alternatives to the defendant's product, to the extent that they are "reasonably interchangeable" for the same or similar uses, and thus restrict the defendant's power to raise prices. *See United States v. E. I. du Pont de Nemours & Co.* , 351 U.S. 377 [76 S. Ct. 994, 100 L.Ed. 1264] (1956).

Id. Thus the court's concern was whether there were reasonably interchangeable substitutes for RDOS in the operating systems market as a whole, a question of critical importance if the question were whether that market had been monopolized.

As the authorities cited earlier establish, the focus of the prohibition against tying arrangements is quite different. The concern is not with the restraint on competition in the tying product but on competition in the market for the tied product. What is required is not monopoly power in the tying product market, but only sufficient power to enable the seller to restrict

[5] The district court suggested that "the presumption of economic power may be inappropriate in the computer software context because copyright notices do not necessarily prevent others from copying the material embodiment of the source program." 529 F. Supp. at 816. The premise of this position was laid to rest in *Apple Computer, Inc. v. Formula Int'l., Inc.*, 725 F.2d 521 (9th Cir. 1984); and *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1249-54 (3d Cir. 1983), decided after the district court's opinion in this case was filed.

competition in the tied product. If a seller's product is distinctive, not available from other sources, and sufficiently attractive to some buyers to enable the seller by tying arrangements to foreclose a part of the market for a tied product, the adverse impact on competition in the tied product is not diminished by the fact that other sellers may be selling products similar to the tying product.

As the Supreme Court said in ***Northern Pacific Railway v. U.S.***, 356 U.S. at 10 n.8, 78 S. Ct. at 520 n.8 "the defendant in *International Salt* [332 U.S. 392, 68 S. Ct. 12, 92 L.Ed. 20] offered to prove that competitive salt machines were readily available which were satisfactory substitutes for its machines (a fact the Government did not controvert), but the Court regarded such proof as irrelevant." And, again, in ***United States v. Loew's, Inc.***, 371 U.S. at 49, 83 S. Ct. at 104, "[T]he mere presence of competing substitutes for the tying product, here taking the form of other programming material as well as other feature films, is insufficient to destroy the legal, and indeed the economic, distinctiveness of the copyrighted product."

The law was succinctly summarized in ***Carpa, Inc. v. Ward Foods, Inc.***, 536 F.2d 39, 48 (5th Cir. 1976), a trademark tying case, in a manner particularly pertinent here:

> What is required is a factual assessment of the tying product's uniqueness and desirability, not its market power in the sense of a Section 2 Sherman Act violation. *United States v. Loew's, Inc.*, 371 U.S. 38, 45, 83 S. Ct. 97 [102], 9 L.Ed.2d 11 (1962). Uniqueness, of course, presupposes that competitors are in some way foreclosed from offering the distinctive product. *Fortner* points out at 505, 89 S. Ct. 1252, note 2, that such barriers may be legal, as in the cases of patented or copyrighted products. Trademarks surely may be included in the list of such legal restraints, and, as with copyrighted material, ***the mere presence of competing substitutes is insufficient to destroy the legal, and more importantly the economic, distinctiveness of the trademark***. See *Loew's*, 371 U.S. at 49, 83 S. Ct. 97.

(emphasis added). *See also Seigel v. Chicken Delight, Inc.*, 448 F.2d 43, 49-50 (9th Cir. 1971).

Fortner II is not to the contrary, as the district court thought. There must, of course be power to coerce. *Fortner II* holds only that a seller lacks such power if buyers may choose between fungible products offered by different sellers. In *Fortner II* the tying item was favorable credit terms, the tied product U.S. Steel's prefabricated homes. U.S. Steel's credit was not unique; money is fungible. Anyone willing to accept less profit could have offered credit terms similar to those offered by U.S. Steel. As the Supreme Court said, "[t]he unusual credit bargain offered to Fortner proves nothing more than a willingness to provide cheap financing in order to sell expensive houses." *Fortner II*, 429 U.S. at 622, 97 S. Ct. at 868. In contrast, no one but defendant could offer RDOS. It was not fungible, but rather in many ways unique.

The question is not whether other operating systems with which RDOS competed were as good as RDOS or better in the eyes of some buyers, but rather whether RDOS, available only from defendant, was sufficiently attractive to some customers to enable defendant to require those who wished to obtain it also to buy from defendant NOVA instruction set CPUs they might otherwise have purchased from others.[6] As we have seen, evidence of the defendant's possession of such power was ample.

Clearly the availability of "comparable" or "functionally equivalent" operating systems would not have freed "locked-in" OEMs of the pressure, imposed by their investment in application software "compatible" only with RDOS, that compelled them to accede to defendant's condition that they purchase defendant's NOVA CPU in order to obtain RDOS.

[6] One of defendant's customers stated the Fairchild NOVA instruction set CPU was ahead of its time technologically but he had to eliminate it from consideration because Fairchild "did not have an operating system available." Another customer testified the SCI Mercury 3 emulator was superior to Data General's NOVA CPU. The record is rich in testimony from customers who stated the tie prevented them from purchasing any CPU other than Data General's.

The district court held that the "lock-in" did not confer upon defendant any "legally cognizable power over price" because OEMs who purchased RDOS and defendant's NOVA instruction set CPUs for use in assembling computer systems for resale were constrained by competition in the resale market from paying non-competitive prices for components of their systems, and that, in fact, defendant's prices to OEMs were fully competitive. 529 F. Supp. at 814-15, 817-18. There are several answers. Some OEMs are insulated from strict price sensitivity. As defendant's marketing manual stated: "[M]any OEM's have an effective monopoly or near-monopoly for their product, because of patent position, market share dominance, control of distribution channels, or whatever. This guy isn't forced to go the lowest possible unit cost." Moreover, to the extent that end-users considered defendant's RDOS to be superior to other operating system software, the OEM's price to the end-user and thus defendant's price of hardware to the OEM, could exceed that of other suppliers. Most important, the passage in *Fortner II* to which defendant refers ("whether the seller has the power, within the market for the tying product, to raise prices *or to require purchasers to accept burdensome terms* that could not be exacted in a completely competitive market," (429 U.S. at 620, 97 S. Ct. at 867)(emphasis added) recognizes that a seller's power to impose an onerous tying arrangement is sufficient to invoke *per se* condemnation. Even assuming defendant's package of RDOS and defendant's NOVA instruction set CPU was competitively priced, the record establishes that defendant could, and did, force that package upon some buyers who, if free to choose, would have bought RDOS from defendant but NOVA instruction set CPUs from others.

"Fundamentally," the district court held, "plaintiffs have not presented evidence demonstrating that their alleged inability to compete with [defendant's] NOVA CPUs is attributable to the software licensing restrictions rather than this failure to meet" defendant's standards of quality and service. Even from the brief summary presented here, it is evident there was ample direct and circumstantial evidence to support the jury's verdict to the contrary.

VI.

The district court also concluded that plaintiffs failed to prove an appreciable restraint in the market for the tied product, the NOVA instruction set CPU. The court noted that the general market for CPUs was highly competitive, "characterized by a wide range of competitive hardware offerings, intense price competition, ease of entry, and rapid growth." 529 F. Supp. at 818. The court noted many competitors had entered the CPU market after the introduction of defendant's RDOS tied to defendant's CPU. *Id.* Even assuming the tie-in appreciably restrained competition "in the NOVA instruction set sub-market," the court said, "the portion of the broad market conceivably affected by this phenomenon is so small that it cannot be characterized as indicative of power 'appreciably to restrain competition' in the general market." *Id.*

But as we have already seen, a detailed analysis of competitive conditions in the tied product market is inappropriate in a *per se* case. Indeed as the district court held in its first opinion, *see* 490 F. Supp. at 1116-17, all that is required in respect to the extent of the restraint in the market for the tied product is that a "substantial *volume* of commerce be foreclosed," *Jefferson Parish Hospital District No. 2 v. Hyde*, 104 S. Ct. at 1560 (emphasis added); and "substantial volume" in this context means only an amount greater than *de minimis*, a requirement clearly satisfied here. *See* 490 F. Supp. at 1117.

VII.

Defendant argues that it is entitled to a new trial both on liability and damages even if the judgment notwithstanding the verdict is overturned.

Although the district court's ruling on the alternative motion for new trial involved the exercise of a measure of discretion, a stringent standard applies when the motion is based on insufficiency of evidence. A motion for new trial may be granted on this ground only if the verdict is against the

"great weight" of the evidence, *J & H Auto Trim Co. v. Bellefonte Ins. Co.*, 677 F.2d 1365, 1373 (11th Cir. 1982); *Conway v. Chemical Leaman Tank Lines, Inc.*, 610 F.2d 360, 363 (5th Cir. 1980), or "it is quite clear that the jury has reached a seriously erroneous result". *Coffran v. Hitchcock Clinic, Inc.*, 683 F.2d 5, 6 (lst Cir. 1982). In this case, the jury's verdict, rather than being clearly contrary to the weight of the evidence, was a more-than-defensible resolution of a difficult issue.

Neither do we think the single issue submitted to the jury (defendant's power to restrain competition) was so intertwined with the issue of damage that the latter cannot be submitted to a new jury without such confusion and uncertainty that the separate trial would amount to denial of a fair trial. *See Gasoline Products Co. v. Champlin Refining Co.*, 283 U.S. 494, 499-500, 51 S. Ct. 513, 514-515, 75 L.Ed. 1188 (1931). Defendant has offered nothing but a general assertion to support its contention to the contrary. *Greenwood Ranches, Inc. v. Skie Construction Co.*, 629 F.2d 518, 522 (8th Cir. 1980). *See* C. Wright & A. Miller, Federal Practice and Procedure, §2814 (1973).

Reversed on the appeal, affirmed on the cross-appeal, and remanded for further proceedings consistent with this opinion.[7]

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[7] Our conclusion that the verdict for plaintiffs should be reinstated disposes of defendant's appeal from the dismissal of defendant's counterclaim alleging this and other similar suits were "sham litigation", the institution of which constituted a violation of the Sherman Act.

APPENDIX B

In re DATA GENERAL CORPORATION
ANTITRUST LITIGATION.

M.D.L. No. 369 WHO.

United States District Court,
N. D. California.

Oct. 29, 1981.

OPINION AND ORDER

[Granting JNOV and Conditional New Trial]

ORRICK, District Judge.

In this exceedingly difficult and complex antitrust litigation involving the legality of certain tying arrangements utilized by defendant, Data General Corporation ("Data General"), in marketing its computer equipment, a jury rendered a verdict for plaintiffs, Fairchild Camera and Instrument Corporation and Digidyne Corporation,[1] after a forty-five day trial limited to the single issue of whether Data General possessed sufficient economic power in the relevant market for the tying product (operating systems software) appreciably to restrain competition in the relevant market for the tied product (central

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[1] Fairchild Camera and Instrument Corporation and Digidyne Corporation are the only plaintiffs who actually proceeded to trial.

A total of eleven separate actions were brought before the Court in the course of this litigation. Three of these actions were originally filed in this District: *Fairchild Camera & Instrument Corp. v. Data General Corp.*, No. C-78-2418 WHO; *SCI Systems v. Data General Corp.*, No. C-78-2417 WHO; *Digidyne Corp. v. Data General Corp.*, No. C-78-1261 WHO. During 1979 and 1980, the Judicial Panel on Multidistrict Litigation transferred an additional eight actions for consolidated or coordinated pretrial proceedings: *Bytronix v. Data General Corp.*, No. C-79-1101 WHO; *Data General Corp. v. Ampex*, No. C-79-1102 WHO; *Data General Corp. v. Ampex*, No. C-79-1103 WHO; *Data Compass v. Data General Corp.*, No. C-79-1345 WHO;

processing units).[2] Defendant has moved for judgment *non obstante veredicto* or, in the alternative, for a new trial, and plaintiffs have moved for an injunction and for a trial on the issue of damages.[3] After a painstaking review of the voluminous evidence in this case, the Court grants defendant's motion for judgment *non obstante veredicto* or, in the alternative, for a new trial, and denies plaintiffs' motion for an injunction and for a trial on the issue of damages.

Ampex v. Data General Corp., No. C-79-3441 WHO; *Data General Corp. v. Data National Corp.*, No. C-79-3442 WHO; *Data General Corp. v. Ampex*, No. C-79-3443 WHO; *Keronix v. Data General Corp.*, No. C-80-1217 WHO.

The Court has requested the Judicial Panel on Multidistrict Litigation to issue an order to show cause why *Data General Corp. v. Data National Corp.* should not be remanded to the District of Massachusetts, in accordance with the procedure set forth in *A.H. Robins Co., "Dalkon Shield" IUD Products Liability Litigation*, 453 F. Supp. 108 (Judicial Panel on Multidistrict Litigation 1978). The remaining actions were settled prior to the commencement of the jury trial.

[2] The Court bifurcated the trial and ordered the issue of liability to be tried first, with the trial on damages to follow soon thereafter. The scope of the liability trial was confined to the question of whether Data General possessed sufficient economic power in the market for the tying product appreciably to restrain trade in the market for the tied product.

The Court excluded from the present trial Data General's counterclaims, alleging that plaintiffs had misappropriated its trade secrets and proprietary information in the development of their NOVA emulators, and plaintiffs' claim that Data General has instituted "sham" litigation regarding its trade secrets, reserving these claims for trial following the trial of the antitrust issue. *See* the Court's Order of July 9, 1980, and the Court's decision on cross-motions for summary judgment, *In re Data General Antitrust Litigation*, 490 F. Supp. 1089 (N.D. Cal. 1980).

[3] The jury rendered its verdict on June 9, 1981. On June 18, 1981, defendant filed its motion for JNOV, or in the alternative, for reconsideration of the Court's grant of partial summary judgment and for a new trial, or in the alternative, for certification for interlocutory appeal. On July 10, 1981, plaintiffs applied for an injunction.

On August 21, 1981, the Court denied defendant's motion for reconsideration of its decision granting partial summary judgment and for a new trial, denied defendant's motion for certification for interlocutory appeal, and took defendant's motion for JNOV and plaintiffs' application for injunction under submission. On September 2, 1981, the Court vacated the trial date for the damages phase, originally set for October 5, 1981. On September 25, 1981, plaintiffs moved for an early setting of the damage trial.

I

A

Data General manufactures and markets various computer systems, including a central processing unit ("CPU") called the NOVA and a line of software, called RDOS, designed for use with the NOVA. Data General sells its systems in a general market found by the jury to consist of manufacturers of general purpose minicomputers and microprocessors. Its competitors in this market include, among others, DEC, IBM, Hewlett-Packard, Honeywell, Prime, Texas Instruments, Interdata, Wang, Computer Automation, General Automation, Intel, Zilog, Burroughs, and NCR. Its customers are primarily original equipment manufacturers ("OEMs"), who apply software to the hardware and resell the completed systems to end-users. Plaintiffs manufacture "NOVA emulators," which are CPUs modeled after the NOVA and which are compatible with RDOS, the operating software which executes the NOVA instruction set.[4]

The roots of this lawsuit lie in Data General's refusal to license its software, RDOS, for use with the NOVA emulators, or with any CPU other than Data General's own NOVA. Data General makes its software available pursuant to a Program License Agreement which restricts the use of such software to CPUs designated by Data General, and with two exceptions not relevant here, Data General has designated only its own CPUs for use with its licensed software.[5] Plaintiffs allege that these

[4] Other companies which manufacture such "NOVA emulators" include Ampex, Lear-Siegler, Keronix, SCI, Point Four, Bytronix, Nixdorf, and Beehive.

[5] Data General has approved the use of its software with CPUs manufactured by ROLM Corporation and Nippon Minicomputer Corporation, neither of whose computer products compete with products offered by Data General in the United States and Europe.

marketing practices are *per se* illegal under § 1 of the Sherman Act, 15 U.S.C. § 1, and § 3 of the Clayton Act, 15 U.S.C. § 14, which proscribe the utilization of tying arrangements affecting a not insubstantial amount of commerce by a manufacturer who possesses sufficient economic power in the market for the tying product (here, RDOS) appreciably to restrain competition in the market for the tied product (here, the NOVA).

B

Upon cross-motions for summary judgment supported by affidavits, and referencing many of the 600,000 documents, 150 depositions, and hundreds of interrogatories and requests for admissions available at that time, the Court found that Data General did in fact tie the sale of its software, RDOS, to the sale of its CPUs. *In Re Data General Corp. Antitrust Litigation*, 490 F. Supp. 1089 (N.D. Cal. 1980) (hereinafter cited as *In Re Data General*). The Court also found, however, that the question of whether Data General possessed sufficient economic power in the market for operating software appreciably to restrain competition in the CPU market presented genuine issues of material fact appropriate for determination by a jury.

In order to make out a *per se* violation[6] of § 1 of the Sherman Act and § 3 of the Clayton Act, plaintiffs must prove three critical elements.[7] First, there must be two separate products, with the purchase of one (the tying product) conditioned upon the purchase of the other (the tied product).

[6] Plaintiffs have relied in this case only on the *per se* rule, and have not attempted to show that Data General's tying arrangements create an unreasonable restraint of trade under the "rule of reason" analysis. *See In re Data General Antitrust Litigation, supra* n.2, 490 F. Supp. at 1101.

[7] The Ninth Circuit has indicated that the standards for a violation of § 1 of the Sherman Act and § 3 of the Clayton Act are "virtually identical." *Moore v. Jas. H. Matthews & Co.*, 550 F.2d 1207, 1214 (9th Cir. 1977). *See also* von Kalinowski, 9 Antitrust Laws and Trade Regulation § 64.05[2]; *In re Data General Antitrust Litigation, supra* n.2, 490 F. Supp. at 1100.

Second, the seller must possess sufficient economic power in the tying product market appreciably to restrain competition in the tied product market. Third, a not insubstantial amount of commerce in the tied product market must be affected. *Fortner Enterprises, Inc. v. United States Steel Corp.*, 394 U.S. 495, 499, 89 S. Ct. 1252, 1256, 22 L.Ed.2d 495 (1969) (hereinafter cited as *Fortner I*) (quoting *Northern Pacific Ry. Co. v. United States*, 356 U.S. 1, 6, 78 S. Ct. 514, 518, 2 L.Ed.2d 545 (1958)).

In considering the parties' cross-motions for summary judgment, the Court addressed five issues: (1) whether there were two separate products, with the purchase of one (the tying product) conditioned upon the purchase of the other (the tied product); (2) whether Data General possessed sufficient economic power in the tying product market appreciably to restrain competition in the tied product market; (3) whether the tie-ins affected a not insubstantial amount of commerce; (4) whether plaintiffs were in fact damaged by the tie-ins; and (5) whether there were business justifications for the otherwise unlawful tie-ins.

First, despite defendant's vigorous argument to the contrary, the Court found that software and CPUs are separate and distinct products, notwithstanding the fact that neither the software nor the CPU can function without the other. The relevant inquiry is not whether the two items must be used together, but whether they must come from the same seller. *Siegel v. Chicken Delight, Inc.*, 448 F.2d 43 (9th Cir. 1971), *cert. denied*, 405 U.S. 955, 92 S. Ct. 1172, 31 L.Ed.2d 232 (1972). Data General itself admits that it sells CPUs for use with non-Data General software, and its price lists contain separate prices for hardware and for software. The undisputed material facts establish that software and CPUs are "separate products" for purposes of finding a tie-in. *In re Data General, supra*, 490 F. Supp. at 1104-06. The Court next found that defendant's tying practices affect a "not insubstantial" amount of interstate commerce, based on standards set forth in *Fortner I*. Plaintiffs showed that Data General sold and shipped

approximately 52,700 CPUs between 1970 and 1978, and that in 1977 alone its shipments were valued at $254,000,000. Moreover, defendant's CPUs are clearly in interstate commerce, inasmuch as they are currently installed throughout the United States and Europe. *In re Data General, supra,* 490 F. Supp. at 1116-17.

Addressing the "fact of injury" requirement, the Court found that plaintiffs demonstrated that they were actually damaged by defendant's tying practices, and that their injury was of an antitrust nature. *Id.* at 1117-19.

Finally, the Court found that the three business justifications which defendant asserted in support of its tying arrangement were not sufficient to permit the maintenance of an otherwise unlawful tie-in scheme. *Id.* at 1120-24.

As to the final issue, whether Data General possesses sufficient economic power in the tying product market appreciably to restrain competition in the tied product market, the Court found there were genuine issues of material fact precluding summary judgment and mandating a jury trial limited to this issue. *Id.* at 1111-16.

II

A

The testimony at trial necessarily focused upon the definitions of the relevant markets for the tying product (operating systems software), and for the tied product (CPUs). In order to instruct the jury properly on this critical issue, the Court considered the contentions of the parties against the backdrop of the Supreme Court's most recent expressions on the subject contained in the Court's opinions in *Fortner I* and *United States Steel Corp. v. Fortner Enterprises, Inc.*, 429 U.S. 610, 97 S. Ct. 861, 51 L.Ed.2d 80 (1977) (hereinafter cited as *Fortner II*).

The threshold legal issue presented is the degree of market analysis necessary to prove economic power in a tying case. Defendant has taken the position that in order to prove

economic power plaintiffs must establish the relevant markets by proof similar to that required in a rule of reason case, including extensive analysis of such factors as substitutability, cross-elasticity of demand, and potential competition. Plaintiffs contend that proof of the relevant markets is unnecessary in a *per se* tying case in which economic power is predicated on the "uniqueness" of defendant's tying product, and in which plaintiffs need only show that the seller possessed economic power over an "appreciable number of buyers" within the tying product market. *Fortner I, supra,* 394 U.S. at 504, 89 S. Ct. at 1259.

An examination of the precedents requiring proof of the relevant tying and tied product markets as a prerequisite for proving economic power reveals that antitrust law has always treated tying arrangements harshly. Before the advent of the *Fortner* litigation, tying arrangements possessing certain critical elements were repeatedly held to be *per se* violations of both §§ 1, 2 of the Sherman Act, 15 U.S.C. §§ 1, 2, and § 3 of the Clayton Act, 15 U.S.C. § 14. *See, e.g., Times-Picayune Publishing Co. v. United States,* 345 U.S. 594, 73 S. Ct. 872, 97 L.Ed. 1277 (1953); *Northern Pacific Ry. Co. v. United States, supra,* 356 U.S. at 5-6, 78 S. Ct. at 518-519; *United States v. Loew's, Inc.*, 371 U.S. 38, 83 S. Ct. 97, 9 L.Ed.2d 11 (1962); *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 47. The rationale for subjecting tying arrangements to a rule of *per se* illegality was expressed by the Supreme Court in *Northern Pacific, supra,* 356 U.S. at 5-6, 78 S. Ct. at 518-519, as follows:

> "[T]here are certain agreements or practices which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use. This principle of *per se* unreasonableness not only makes the type of restraints which are proscribed by the Sherman Act more certain to the benefit of everyone concerned, but it also avoids the necessity for an incredibly complicated and prolonged

economic investigation into the entire history of the industry involved, as well as related industries, in an effort to determine at large whether a particular restraint has been unreasonable—an inquiry so often wholly fruitless when undertaken.

* * * *

For our purposes a tying arrangement may be defined as an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier. Where such conditions are successfully exacted competition on the merits with respect to the tied product is inevitably curbed. Indeed 'tying agreements serve hardly any purpose beyond the suppression of competition.' *Standard Oil Co. of California* [and *Standard Stations*] *v. United States,* 337 U.S. 293, 305-306 [69 S. Ct. 1051, 1058, 93 L.Ed. 1371]. They deny competitors free access to the market for the tied product, not because the party imposing the tying requirements has a better product or a lower price but because of his power or leverage in another market. At the same time buyers are forced to forego their free choice between competing products."

Since it is the use of "power or leverage in another market" which the antitrust laws proscribe, the Court reasoned that tie-ins are "unreasonable in and of themselves whenever a party has sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product and a 'not insubstantial' amount of interstate commerce is affected," and noted that "where the seller has no control or dominance over the tying product so that it does not represent an effectual weapon to pressure buyers into taking the tied item any restraint of trade attributable to such tying arrangements would obviously be insignificant at most." *Id.* at 6, 78 S. Ct. at 519.

A review of the case law prior to *Fortner I* and *II* reveals that, despite the economic power requirement stated in *Northern Pacific,* the courts did not require plaintiffs to submit detailed market information in order to prevail on *per se* tying claims. In *United States v. Loew's, Inc., supra,* 371 U.S. at 45, n.4, 83 S. Ct. at 102, n.4, the Supreme Court stated:

"Since the requisite economic power may be found on the basis of either uniqueness or consumer appeal, and since market dominance in the present context does not necessitate a demonstration of market power in the sense of § 2 of the Sherman Act, it should seldom be necessary in a tie-in sale case to embark upon a full-scale factual inquiry into the scope of the relevant market for the tying product and into the corollary problem of the seller's percentage share in that market. This is even more obviously true when the tying product is patented or copyrighted, in which case, as appears in greater detail below, sufficiency of economic power is presumed. Appellants' reliance on *United States v. E. I. du Pont de Nemours & Co.,* 351 U.S. 377, 76 S. Ct. 994, 100 L.Ed. 1264, is therefore misplaced."

Thus, the Court indicated that the intricate market analysis and detailed evidence of factors such as cross-elasticity of demand, substitutability, and potential competition appropriate in a monopolization case like *du Pont* was not required in the context of *per se* tying cases.

In two leading tie-in decisions rendered during the past decade, however, the Court expressed its dissatisfaction with the evolution of the *per se* analysis and suggested that some degree of market analysis is necessary even in a *per se* case. In *Fortner I* and *Fortner II* the Court emphasized that the focus in a *per se* tying case must be on "whether the seller has the power, within the market for the tying product, to raise prices or to require purchasers to accept burdensome terms that could not be exacted in a completely competitive market. In short, the question is whether the seller has some advantage not shared by his competitors in the market for the tying product."

Fortner II, supra, 429 U.S. at 620, 97 S. Ct. at 867. The Court went on to suggest three indicia of such economic power.

First, it may be shown that the seller occupies a dominant position in the tying product market. *Id.* at 620, 97 S. Ct. at 867. Second, it may be shown that the seller's product is sufficiently unique that he has "some advantage not shared by his competitors in the market for the tying product." *Id.* The Supreme Court has described such "uniqueness" in terms of a tying product's legal, physical, or economic characteristics that confer special advantages upon the seller. The Court in a footnote explained:

> "Uniqueness confers economic power only when other competitors are in some way prevented from offering the distinctive product themselves. Such barriers may be legal, as in the case of patented and copyrighted products, *e.g., International Salt, Loew's,* or physical, as when the product is land, *e.g., Northern Pacific.* It is true that the barriers may also be economic, as when competitors are simply unable to produce the distinctive product profitably, but the uniqueness test in such situations is somewhat confusing since the real source of economic power is not the product itself but rather the seller's cost advantage in producing it." *Fortner I, supra,* 394 U.S. at 505 n.2, 89 S. Ct. at 1259 n.2.

Third, economic power may be shown where a substantial number of customers have accepted the tie-in and there are no explanations other than the seller's economic power for their willingness to do so. *Fortner II, supra,* 429 U.S. at 618 n.10, 97 S. Ct. at 867 n.10.

The cases shed little light on the question of what degree of market proof is required in a *per se* tying case in the wake of *Fortner I* and *Fortner II.* To require market evidence identical to that appropriate in a rule of reason case would effectively eradicate the distinction between rule of reason cases and *per se* cases. However, if the jury is to make the determinations required by *Fortner,* definition of the relevant market and

identification of competitors therein is necessary to determine whether there are exclusionary effects in the market for the tied product, and whether the seller has some advantage not shared by his competitors in the market for the tying product.[8]

Thus, the task of plaintiffs in this case was to introduce sufficient evidence of the tying product market to permit the jury to find that Data General's competitors were prevented from developing competitive software, and sufficient evidence of the tied product market to permit the jury to find an appreciable restraint of trade.[9] Although plaintiffs were not required to present market evidence as extensive as that required in a rule of reason case, they could not recover on the alleged tie-ins unless they identified and proved the relevant markets for the tying and tied products.

Defendant takes the position that the relevant market for the tied product consists of all general purpose minicomputers, microprocessors, and mainframe computers that utilize a CPU within the $300 to $20,000 price range, and that if the market is to be narrowed further, suggests that it include all general purpose minicomputers or at the very least all 16-bit machines.[10] (*See* defendant's proposed jury instructions on the relevant markets; defendant's motion for JNOV at 3.) Defendant's definition of the tying product market parallels its definition of the tied product market, and consists of that operating systems software which will run on the CPUs described above.

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[8] *See* Antitrust Law Developments, Antitrust Law Section of the ABA (2d Supp.) at 15.

Cases subsequent to *Fortner II* have confirmed the necessity for defining the markets in which economic power is to be measured. *See, e.g., Kingsport Motors v. Chrysler Motors Corp.,* 644 F.2d 566 (6th Cir. 1981); *Reisner v. General Motors Corp.,* 511 F. Supp. 1167 (S.D.N.Y. 1981). The utility of these cases is limited by the fact that the courts state their findings of relevant markets without explaining the analysis leading to those findings.

[9] *See* the Court's *in limine* ruling of March 20, 1981.

[10] The number of bits in a computer determines the number of characters which can be manipulated at a time, and thus affects the speed at which data can be processed.

Plaintiffs contend that the relevant submarket or market is much more limited. Initially plaintiffs seemed to favor a relevant tying market based on the principle of software "lock-in," which would include only those types of operating systems software compatible with applications programs written to run on Data General's software RDOS. Plaintiffs settled, however, on a market based on the principle of compatibility with the NOVA set, defining the tying market as those types of systems software which will run on CPUs utilizing the NOVA instruction set, and the tied market as those CPUs utilizing the NOVA instruction set. (*See* plaintiffs' proposed jury instructions on the relevant markets; plaintiffs' response to defendant's motion for JNOV at 20-21.)

The focus in defining a relevant product market must be upon recognizing those firms and products which present relevant alternatives to the defendant's product, to the extent that they are "reasonably interchangeable" for the same or similar uses, and thus restrict the defendant's power to raise prices. *See United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 76 S. Ct. 994, 100 L.Ed. 1264 (1956); *Kaplan v. Burroughs Corp.*, 611 F.2d 286 (9th Cir. 1979), *cert. denied*, 447 U.S. 924, 100 S. Ct. 3016, 65 L.Ed.2d 1116 (1980).

Within this relevant market there may in some cases exist a well-defined submarket which can in itself constitute a tying product market for purposes of assessing economic power, and a corresponding tied product submarket for purposes of assessing restraint on trade. Whether such a submarket exists and how it should be defined will depend on the facts of the individual case, but the factors to be considered are set forth in an often-cited passage from *Brown Shoe, Inc. v. United States*, 370 U.S. 294, 325, 82 S. Ct. 1502, 1523, 8 L.Ed.2d 510 (1961):

> "The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it. However, within this broad market, well-defined submarkets may exist which in themselves constitute product markets for antitrust purposes. *United States v. E. I. du Pont de Nemours & Co.*, 353 U.S. 586, 593-595, 77 S. Ct. 872, 877, 1 L.Ed.2d 1057 (1956). The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors."

B

The Court's instructions to the jury with respect to the definition of the relevant markets for the tying and tied products were based on the legal standards described above. First, the Court instructed the jury that in order to decide the economic power issue, it must determine relevant markets for the tying and tied products. Jury Instruction ("JI") 28. The Court next instructed the jury as to plaintiffs' and defendant's proposed definitions of the relevant markets. JI 29. Plaintiffs define the tying product market as "all operating systems software which runs on CPUs utilizing the NOVA instruction set." Defendants contend that the markets or submarkets proposed by plaintiffs do not exist, and that the tied product market is "all general purpose minicomputers, microprocessors, and mainframe computers, regardless of what company makes them," and the tying product market consists of "all operating system software suitable for use with the CPUs just described." The instructions clearly stated that the jury, as the sole judge of the facts, was not limited to just plaintiffs' or defendant's view of the relevant markets or submarkets and was free to find that these markets or submarkets were constituted differently. JI 29.

The Court next instructed the jury as to the criteria which should govern their definition of the relevant markets. JI 30. A relevant product market consists of "all products for which there is a reasonable degree of substitutability," and "products which are not reasonably interchangeable or substitutable should not be considered in the same tying and tied product market." The Court then explained that "within the general product market there may exist a submarket which in itself

constitutes a product market for determining economic power in the tying product market or appreciable restraint in the tied product market." JI 31. The Court then set forth the factors enumerated in ***Brown Shoe, supra,*** noting that these factors are merely practical aids in identifying possible submarkets and are not compulsory bases for the jury's finding.

C

In conjunction with its general verdict that defendant "possessed sufficient economic power within the market for the tying product, the operating system software, to have appreciably restrained competition within the market for the tied product, the CPU, from 1977 to the present," the jury made six findings regarding the relevant markets in response to special jury questions. Question No. 1: "What is the appropriate market for the tying product?" The jury rejected the definitions proposed by plaintiffs and defendant, and defined the relevant market as "all general purpose minicomputers and microprocessors." Question No. 2: "Is there an appropriate submarket for the tying product?" The jury answered in the affirmative. Question No. 3: "What is the appropriate submarket for the tying product?" The jury found in accordance with plaintiffs' definition that the submarket is "operating software which run with CPUs utilizing the NOVA instruction set."

With respect to the tied product market, the jury questions and answers paralleled those given for the tying product market. The jury in Question No. 4 rejected both parties' proposed definitions of the relevant tied product market, and defined it as consisting of "all general purpose minicomputers and microprocessors." The jury found in response to Question No. 5 that an appropriate submarket for the tied product did exist and, in Question No. 6, accepted plaintiffs' definition of that market "CPUs utilizing the NOVA instruction set." Thus, in defining the general markets, the jury did not simply follow the definitions proposed by the parties or any instruction of the Court, but instead developed its own definitions of those markets.

D

Having instructed the jury as to the standards governing market definition, the Court next instructed the jury to determine whether defendant possesses "sufficient economic power within the tying product market appreciably to restrain competition in the tied product market." JI 32. The Court defined economic power as "the power to raise prices, or instead of raising prices, to impose burdensome terms, that could not be exacted in a completely competitive market with respect to any appreciable number of buyers within the market." The Court explained that such power could be proven by direct evidence of a seller's power to raise prices or impose burdensome terms, or by proof that "the seller's product is sufficiently unique that he has some advantage not shared by his competition in the market for the tying product." JI 33.

The Court further instructed the jury that uniqueness confers economic power only when other competitors are in some way prevented from offering the distinctive product themselves, noting that the question of whether competitors must be able to offer compatible software, *i.e.*, software which will run with RDOS-based applications programs with little or no modification of those programs, or simply comparable software, *i.e.*, software which is functionally equivalent to RDOS but which will not run with RDOS-based applications programs without substantial modifications, was for the jury to decide. JI 36. The Court instructed the jury that a competitor may be prevented from offering the distinctive product by legal barriers, economic barriers, and/or physical barriers. JI 35. The Court explained that copyright protection is presumed to constitute such a legal barrier, and that the burden is on defendant to rebut that presumption by proving that its copyrights have not prevented others from developing the distinctive product themselves. JI 37, 38. Similarly, the Court explained that trade secrets may constitute a legal barrier only upon plaintiffs' proof that such trade secrets protection prevents others from offering the distinctive product themselves. JI 39, 40.

Turning to the question of economic barriers, the Court instructed the jury that software "lock-in" renders RDOS unique and confers economic power upon defendant only if the evidence shows that (1) some of defendant's customers are in fact "locked-in"; and (2) this "lock-in" phenomenon gives defendant an advantage not shared by its competitors in the market for the tying product. JI 42. The Court then instructed the jury that the alleged superiority of RDOS in terms of comprehensiveness, field testing, and other desirable qualities, could constitute an economic barrier rendering RDOS unique only upon a showing that others were prevented from offering software with the same distinctive qualities. JI 43. The Court explained that these alleged barriers could be considered individually or in combination as proof of uniqueness conferring economic power. JI 44. The Court also instructed the jury that economic power over an appreciable number of buyers in the market, even if such power is not complete over these buyers or over all other buyers in the market, is sufficient to satisfy the economic power test. JI 45.

Finally, the Court instructed the jury as to the meaning of appreciable restraint of competition in the market for the tied product: "The term 'appreciably to restrain competition in the market for the tied product' means to interfere appreciably with the ordinary, usual, and freely competitive pricing or distribution system of the open tied product market." JI 46.

On the basis of the foregoing instructions, the jury found, in response to Question Nos. 7, 8, and 9 that "defendant had power to raise prices, or instead of raising prices, to impose burdensome terms that could not be obtained in a completely competitive market or submarket"; that "defendant's operating system software was sufficiently unique that defendant had some advantage not shared by its competitors within the appropriate operating system software market or submarket"; and that there was "an appreciable restraint within the tied product market or submarket."

The difficulty in interpreting the jury verdict arises from the fact that it is impossible to determine from the form of the general verdict and the special questions whether the findings of economic power and appreciable restraint refer to the market or to the submarket. Nonetheless, whether the jury based its findings on the market or on the submarket, the Court finds that the jury verdict cannot stand, because the evidence in this case does not support a finding of sufficient economic power appreciably to restrain competition in either of these markets.

III

A

The standards for granting a judgment notwithstanding the verdict are the same as those for granting a directed verdict. *Fountila v. Carter*, 571 F.2d 487 (9th Cir. 1978). A court may grant a motion for JNOV only if, without in any sense passing upon the credibility of the witnesses, it finds that the evidence and its inferences, considered as a whole and viewed in the light most favorable to the nonmoving party, can support only one reasonable conclusion: that the moving party is entitled to JNOV. *Inglis v. ITT Continental Baking Co.*, 652 F.2d 917, 930 (9th Cir. 1981); *Murphy Tugboat v. Crowley*, 467 F. Supp. 841, 848 (N.D. Cal. 1978), *aff'd*, 658 F.2d 1256 (9th Cir. 1981); *Fount-Wip, Inc. v. Reddi-Whip, Inc.*, 568 F.2d 1296, 1300 (9th Cir. 1978). The Court is not free to weigh the evidence or to reach a result that it finds more reasonable, so long as the jury's verdict is supported by "substantial evidence." *Inglis v. ITT Continental Baking Co., supra; Murphy Tugboat v. Crowley, supra; Continental Ore v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 696 n.6, 82 S. Ct. 1404, 1409 n.6, 8 L.Ed.2d 777; *Butte Copper & Zinc Co. v. Amerman*, 157 F.2d 457, 458 (9th Cir. 1946).

The Supreme Court has defined the term "substantial evidence" as meaning "more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consolidated Edison Co. v.*

NLRB, 305 U.S. 197, 229, 59 S. Ct. 206, 216, 83 L.Ed. 126 (1938). The Ninth Circuit recently held that "[i]n order to benefit from the favorable inferences available under either the directed verdict or j.n.o.v., a party must present substantial evidence, defined as evidence as a reasonable mind might accept as adequate to support a conclusion." *Kaplan v. Burroughs Corp., supra*, 611 F.2d at 290. The Ninth Circuit most recently applied the "substantial evidence" test in the context of a motion for JNOV in *Inglis*, a predatory pricing case. The district court had granted JNOV in favor of defendant on the grounds that plaintiff's evidence regarding defendant's cost-price relationship was legally insufficient to establish predatory pricing. The Court of Appeals reversed, finding that the district court's conclusion had been based at least in part on the Court's doubts as to the credibility of plaintiff's witness. It may be noted here that such weighing of the evidence plays no part in the Court's decision to grant JNOV in the instant case.

B

The jury's definition of the relevant tied product market as consisting of all general purpose minicomputers and microprocessors, and of the relevant tying product market as consisting of all the operating systems software which will run on such minicomputers and microprocessors, is the only reasonable definition on the basis of the evidence presented.

The evidence points to a broad, dynamic, highly competitive market in which numerous vendors of microprocessors, minicomputers, and mainframes compete to offer original equipment manufacturers (OEMs) all purpose computer solutions designed to meet a variety of end-user needs. Dr. Stiegler, economist and witness for the defendant, states that the market for all computer services which are supplied by Data General's CPUs and software must be much wider than only the minicomputers themselves because:

> "Large minicomputers and shared mainframe computers are in full, direct competition to provide the identical or equivalent services to the potential customers. This is the fundamental market in which Data General competes." RT 6850, lines 2-8.

Computer vendors of different instruction sets are all offering OEMs general-purpose solutions for the OEMs to meet end-user needs for a broad variety of applications. The end-user can in turn choose from among the solutions offered by the OEMs of different manufacturers, not only in the minicomputer market, but also in the microprocessor and mainframe markets.[11] Thus, the relevant market must also be defined by the competition to meet end-user needs, since it is the demand of end-users which determines what computer systems OEMs will buy and what systems vendors will sell.

The testimony of numerous "locked-in" customers shows that they selected Data General only after evaluating the broad range of competitive hardware and software offerings.[12] Customer testimony indicated that the desirable features of RDOS could be found in other operating systems, and identified several operating systems in particular as competitive with or superior to Data General's operating systems.[13] The industry itself views the market as a general market for a broad range of computer services.[14] Data General itself regards its competition as "the traditional minicomputer industry" and identifies a

[11] This competition was recognized by plaintiffs' economist, Professor Stiegler, who, while reluctant to define a market, did acknowledge competition not only within the minicomputer market place, but between minicomputers and mainframes and minicomputers and microprocessors. RT 3625, lines 7-16, RT 6991-6993.

[12] *See, e.g.*, RT 620, line 25—621, line 13; RT 633, line 5—635, line 4; RT 844, line 2—845, line 9; RT 855, line 20—856, line 1; RT 916, line 16—918, line 24; RT 985, lines 7-16; RT 1060, lines 13-23; RT 1145, line 16—1147, line 5.

[13] *See, e.g.*, RT 807, lines 3-14; RT 2746, line 6—2751, line 25; RT 2368, line 25—2370, line 21; RT 2506, line 22—2207, line 2; RT 2370, lines 6-14; RT 1277, line 21—288, line 11; RT 842, line 23—846, line 21; RT 914-915, line 14; RT 2466, line 22—2467, line 9; RT 2505, line 23—2506, line 19.

[14] *See, e.g.*, RT 3936, 3937, 3939, 4307.

large number of competitors in that industry as restraining its pricing ability.[15] Each of these competitors offer systems software for use with their CPUs' particular instruction set, and there are currently more than 100 different sets of operating system software available in the United States.[16] Competitors, too, have testified as to the breadth of competitive offerings in the industry, and plaintiffs' own documents show that competitors do not view the market in terms of any particular vendor's instruction set.[17] Thus, the Court finds that the jury's definition of the relevant tying and tied product markets as encompassing all general purpose minicomputers and microprocessors is clearly supported by the evidence in this case.

The Court also finds that no reasonable jury could find that the defendant possessed sufficient economic power in the relevant tying product market appreciably to restrain competition in the relevant tied product market as these markets have just been defined.

Plaintiffs seek to prove Data General's economic power by two methods: (1) by direct evidence of Data General's power over price, and (2) by evidence showing that RDOS is "unique" and that this uniqueness confers upon Data General an advantage over its competitors because they are unable to offer the distinctive product themselves. Plaintiffs' evidence on the economic power issue was directed toward the NOVA instruction set submarket, and plaintiffs have made no real attempt to prove that Data General possessed economic power over an appreciable number of buyers in the general market. The Court will nonetheless examine the evidence concerning defendant's economic power to the extent that it can support a finding of economic power in either of the relevant tying product markets found by the jury.

[15] *See, e.g.*, RT 2005, line 6—2006, line 19; RT 2034, line 19—2036, line 3; Exhibit Nos. 92, 314, 442, 524, 696, 699, 1261, 1569.

[16] RT 406, lines 5-10.

[17] Exhibits OOQ, OOS, OPD, OPE.

Plaintiffs' direct evidence of defendant's power over price rests essentially on the software lock-in theory discussed above. Plaintiffs contend that the relative price insensitivity of Data General's locked-in customers enables it to impose discriminatory prices or terms upon its old customers, or alternatively, to impose higher prices uniformly as to all customers even at the cost of losing some new business. The evidence unmistakably proves, however, that lock-in does not free Data General from the competitive restraints of the general market, and that Data General's prices are in fact competitive.

The degree of "lock-in" depends on a number of variables, particularly on the manner in which a customer writes its applications programs. The testimony indicates that the technology to develop conversion aids already exists. The witness Trevor, for example, testified that his company, Cold Spring Investment Corporation, has reduced future conversion difficulties by segregating all of the operating system calls into a block of routines independent of the applications program, and that this helped when converting an application program from RDOS to AOS. RT 1178, lines 16-23. The testimony indicates that conversion is in each case an individual business decision. As stated by the witness Bossett in his testimony on the feasibility of conversion:

> "If the dollars that I have to invest and the time that I have to invest warrant the return, then conversion is the route to take." RT 1183, lines 3-19.

Witness Richard Bajackson testified that certain additional factors warrant consideration in deciding whether to convert. These factors are the resulting benefits in hardware capability, reliability, or servicing. RT 2907-2908.

The evidence shows that it is virtually impossible to calculate the degree of commitment to Data General software and the sensitivity to price of Data General's locked-in customers. Dr. McClure testified that "there are degrees of lock-in and some applications are more locked-in than other applications." RT 696, lines 22-25. In addition, plaintiff's expert, commis-

sioned to survey OEMs on this issue, acknowledged that his findings "don't really help us to decide whether Data General OEMs think they are dependent on Data General software." RT 3412, lines 9-24.

The evidence also shows that Data General's locked-in customers are not sufficiently insulated from competition in the broad market to enable Data General to impose discriminatory prices or terms upon old customers. The evidence shows that OEMs are very price-sensitive, and that if Data General overcharged its old customers it would destroy its customer base because its OEMs would not be able to compete against OEMs of other vendors in the resale market.

Moreover, plaintiffs have offered no evidence to rebut Data General's contention that it actively seeks to attract new customers as well as to make sales for new applications and additional sales for use with existing applications. The fact that the continuing satisfaction of existing customers is an indispensable base for attracting new business, since decisions to purchase from a particular vendor are based largely on reports from existing customers,[18] supports a finding that Data General's competitive position with regard to existing customers is no different than its position with regard to new customers. Plaintiffs' only evidence that Data General discriminates against old customers consists of speculation and testimony by some old Data General customers that they occasionally experienced delays in service or delivery.[19] Such evidence is not sufficient to uphold a finding that Data General imposed discriminatory prices or terms upon its locked-in customers.

Moreover, the overwhelming weight of the evidence shows that Data General's pricing is in fact competitive both in policy and result, and that competitive constraints on Data General's pricing practices prevented Data General from possessing or

[18] RT 812, line 19—813, line 2; RT 785, lines 5-7.

[19] *See, e.g.*, RT 1105, line 7; RT 841-842; RT 1655, line 11; RT 1656, lines 14-17.

exercising legally cognizable power over price. Evidence contained in witness testimony and exhibits indicates that competitive constraints are of prime importance in Data General's pricing practices.[20] Customer testimony shows that Data General's hardware and software packages are competitive in terms of functionality and price, and are sometimes functionally superior, to those offered by competitors.[21] For example, witness David Clinton testified that his company made the decision to purchase the Data General hardware and software, as opposed to those of DEC, Hewlett-Packard, Varian, and others because:

> "We felt that the Data General NOVA offered more performance in terms of the computing capability per dollar of cost than these other machines represented." RT 635, lines 11-14.

Plaintiffs contend that Data General's January, 1980 announcement "unbundling" software prices from hardware prices demonstrates its power over price. The evidence, however, shows that the price "unbundling" was not a price "increase" in software, but rather a price "shift" which enabled existing customers to pay only for those software items they actually needed, and that the "unbundling" actually constituted a reduction in package price.[22]

Plaintiffs further contend that Data General's practice of requiring its software licensees to purchase a minimum amount of its memory and periphe...l products (the so-called "minimum equipment configuration," or "MEC") or to pay a program license charge for its software demonstrates Data General's economic power. The evidence, however, does not support plaintiffs' contention that the MEC is an example of

[20] *See* Exhibit 5; *see also* RT 53-55; RT 2380, line 20—2381, line 17; RT 2383, lines 3-15; RT 2385, lines 8-13; RT 2389, line 12—2390, line 1; RT 3088, line 16; RT 2504, lines 11-22; RT 2520, lines 3-16.

[21] RT 919, line 14—920, line 2; RT 2621, line 20—2623, line 6; RT 2812, lines 5-14.

[22] Exhibit 647; RT 3131, line 17—3132.

Data General's ability to raise prices or to impose burdensome terms. Plaintiffs' single-item price comparisons as to certain peripherals included in MEC fly in the face of *Fortner II* as well as economic common sense: where a tying product is part of a larger package, price competitiveness can only be measured in terms of what the buyer paid and what he received for the package as a whole.[23] Customer testimony establishes that the benefits of MEC included not only the products involved, but also the real and perceived advantages for buyers of system reliability and single source accountability where a complete configuration is obtained from a single vendor.[24] In short, plaintiffs have not presented any substantial evidence to support their theory that software lock-in enables Data General to raise prices or to impose terms that could not be exacted in a completely competitive market.

Similarly, plaintiffs have failed to prove that RDOS is unique and that such uniqueness gives Data General an advantage over its competitors. Plaintiffs claim that RDOS is unique for two distinct reasons: (1) it is the most comprehensive, field-proven, and generally desirable software available; and (2) it is the only software compatible with RDOS-based applications program.

Proof that RDOS is inherently superior to other software and thus has unusual appeal for consumers may render RDOS "unique" within the meaning of *Fortner I* and *Fortner II* to the extent that competitors are prevented from offering a comparable product themselves. However, plaintiffs have not carried their burden of proof on this issue. Looking at the evidence in the light most favorable to the plaintiffs, the Court will assume that customers viewed RDOS as uniquely desirable and that it in fact possesses various features which render it superior to other software, although there was substantial evidence indicating that other types of software are equally or

[23] RT 2301, line 13—2302, line 9.

[24] *See, e.g.*, RT 918, line 16—918, line 11; RT 922, line 4—925, line 4; RT 624, lines 10-18; RT 657, line 23—658, line 2.

more attractive and were often preferred by customers. Assuming that RDOS is in this sense "unique," however, plaintiffs have failed to prove that Data General's competitors were prevented from developing functionally equivalent software.

The evidence does not support plaintiffs' claims that legal barriers in the form of copyright notices and trade secrets protection, as well as economic barriers, deterred competitors from developing comparable software. As the Court noted in its earlier opinion, the existence of copyright notices generally creates a presumption of economic power, but does not conclusively prove such power.[25] Moreover, the presumption of economic power may be inappropriate in the computer software context because copyright notices do not necessarily prevent others from copying the material embodiment of the source program.[26]

Plaintiffs' evidence on the copyright issue came almost exclusively from plaintiffs' expert witness Professor Latman, who explained the limited nature of the protection afforded by copyrights in the software context. RT 2087. No evidence was offered as to the actual effect of copyright notices on the development of *comparable* software. The testimony of plaintiffs' chief witness Professor Latman merely addressed the question of how copyright might affect the development of any *compatible* software. Professor Latman bases his testimony on the assumption that "Data General's customers must develop applications software that has to dovetail with Data General's software." RT 2085, lines 23-25. Yet, a competitor's software does not have to "dovetail" with RDOS-based applications programs because as previously stated it is comparability, not identicality, which is revelant insofar as uniqueness is predicated on the superior qualities of RDOS.

Nor does the evidence support a finding that Data General's trade secrets protection created a legal barrier preventing

[25] *In re Data General Antitrust Litigation, supra* n.2, 490 F. Supp. at 1113.

[26] *Id.*

competitors from developing comparable software. Trade secret protection has never been held to create a presumption of economic power. The evidence pertaining to trade secrets came primarily from plaintiff's expert witness Roger Milgrim. It should be noted that Milgrim's testimony was not based on the specific facts of this case, since he had made no investigation as to Data General's particular policies or practices in this area. Milgrim testified that trade secrets protection can only arise where confidential information is disclosed pursuant to a confidential relationship. Thus, trade secret law:

> "primarily protects the owner against wrongful use or disclosure of the trade secret by persons standing in a legal relationship to the owner, which relationship limits the right to use or disclose. The most typical such relationships arise out of a contract, such as an employment or a license agreement, or a so-called confidential relationship * * * such as that which exists between an employer and an employee." RT 2282-2283.

Since there is no claim of such a relationship between Data General and its competitors, Data General's licensing of software and claims of trade secret protection cannot prevent competitors from developing equivalent software. In other words:

> "While an owner of a trade secret has extensive rights with respect to those standing in a contractual or confidential relationship to him, he * * * has no rights at all against independent third parties who develop similar or identical matter. * * * Thus, if XYZ first develops program 'Dynamite'—a software program—retaining it and licensing it as a trade secret, the law of trade secrets will not prevent ABC—another company—from developing a program * * * serving the same function and meeting the same specifications, whether or not the second program is identical to the first * * *." RT 2282-2283.

Moreover, the testimony regarding trade secrets focused on the possible effects on the development of software compatible with RDOS-based applications programs, rather than comparable, functionally equivalent software.

Plaintiffs have also attempted to prove the existence of economic barriers which deter competitors from developing comparable software. Plaintiffs presented evidence showing the high costs and high risks associated with developing comparable software. RT 7228-7240. Under the standard established by *Fortner II*, however, such evidence is without significance unless it is based on comparative statistics; the critical question for purposes of assessing Data General's "advantage" over competitors is whether it is more difficult or expensive for competitors to develop such software initially. RT 812, line 19—813, line 2. The evidence shows that comparable software could be developed *more* easily today due to increased technology. In fact, plaintiffs' expert witness Dr. McClure admits that as a result of the increase in the available tool of technical knowledge about the software, it would not take as long to develop systems software comparable to the systems software that Data General offers in its NOVA line as it took Data General to do it in the first place. RT 747, lines 10-25. Furthermore, Fairchild's own development of NOVA compatible software, and testimony indicating that Fairchild could add to that software all of the desirable features of RDOS, confirms the absence of significant economic barriers. RT 7228-7240; Exhibit ETJ.

Finally, plaintiffs seek to prove that RDOS is unique because it is the only software that will run with RDOS-based applications programs, and that this software lock-in confers a competitive advantage upon Data General because its competitors are prevented from developing RDOS-compatible software by the legal and economic barriers discussed above. Looking at the evidence in the light most favorable to the plaintiffs, the Court will assume that these barriers prevent competitors from developing compatible software and that the costs of converting to a noncompatible software are substantial. The Court finds, however, that on the basis of the evidence

presented, this type of "uniqueness" does not give Data General the type of competitive advantage and consequent economic power envisioned by *Fortner II*. In *Fortner II*, the Court cited with approval the following interpretation of uniqueness as an indicia of economic power: "Whenever there are some buyers who find a seller's product uniquely attractive, *and are therefore willing to pay a premium above the price of its nearest substitute*, the seller has the opportunity to impose a tie to some other good." *Fortner II*, 429 U.S. at 621, 97 S. Ct. at 868 (emphasis added). Thus, uniqueness is an indicia of economic power to the extent that the manufacturer of a unique product which competitors are prevented from offering may exact a premium, in the form of higher price or burdensome terms, which could not be exacted in a completely competitive market. As the Court demonstrated above, however, the evidence unmistakably shows that Data General's prices are competitive and that Data General cannot exploit the supposed advantages of software lock-in because lock-in does not free it from the price constraints of the general market. Thus, although uniqueness may in many cases support a valid inference of economic power, the record in this case overwhelmingly rebuts any such inference of economic power from the fact of lock-in.

Plaintiffs' failure to prove that Data General possesses economic power in the relevant tying product market necessarily means that Data General cannot exercise such power to restrain competition in the relevant tied product market. Quite apart from this failure of proof, however, the record clearly shows the absence of any appreciable restraint in the market for the tied product.

Plaintiffs' evidence of appreciable restraint of competition has been directed not at the general market described above, but at the effects of defendant's tying practices upon the NOVA emulator manufacturers. Plaintiffs' expert witness Professor Schmalensee plainly stated that his discussion of restraint of competition was directed to the NOVA emulator market, and that he has not concluded that Data General's licensing practices and MEC policy worked an appreciable restraint on the CPU manufacturers in the general market, such as DEC,

Hewlett-Packard, IBM, Burroughs, or Computer Automation. RT 3606-3607. Indeed, plaintiffs have not even attempted to prove that Data General's practices have appreciably restrained trade in this market.

The evidence shows that this general market is characterized by a wide range of competitive hardware offerings, intense price competition, ease of entry, and rapid growth. Data General's competitors in this market include DEC, Hewlett-Packard, Texas Instruments, Burroughs, General Automation, IBM, Honeywell, and Microdata, as well as the manufacturers of "NOVA emulators," which include Fairchild, Digidyne, Lear-Siegler, Ampex, Keronix, SCI, Point Four, and Bytronix. The testimony further shows that there were numerous new entries into this market in the years following the introduction of RDOS, the Program Licensing Agreement, and the MEC. RT 3556. And, assuming that software lock-in appreciably restrained competition in the NOVA instruction set submarket, the portion of the broad market conceivably affected by this phenomenon is so small that it cannot be characterized as indicative of power "appreciable to restrain competition" in the general market.

C

The Court now turns to the evidence pertaining to the "NOVA instruction set" market or submarket found by the jury, finding that there is no substantial evidence justifying such a definition of the relevant market and, furthermore, that the evidence does not support a reasonable finding of economic power or restraint of competition even in this narrow market.

According to the market definition principles established in *Brown Shoe*, a "well-defined" submarket which in itself would constitute a "product market" for antitrust purposes may exist where certain factors insulate those competitors in the submarket from the competitive forces operating in the general market. Such a submarket may be delimited on the basis of practical factors such as "industry or public recognition of the submarket as a separate economic entity, the product's peculiar character-

istics, and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes and specialized vendors." *Brown Shoe, Inc. v. United States, supra*, 370 U.S. at 325, 82 S. Ct. at 1523.

The indicia suggested in *Brown Shoe* "are not to be used in a 'talismanic fashion' * * * rather, we must approach the problem pragmatically and keep in mind *Brown Shoe's* instruction that a submarket must be 'economically significant.'" *Kaplan v. Burroughs Corp., supra*, 611 F.2d at 292.

Plaintiffs have offered no evidence, apart from mere opinion, demonstrating that the "NOVA instruction set" submarket is a "well-defined" submarket which is insulated from the competitive forces in the general market, or that identification of particular instruction sets provides a meaningful principle of market definition.

Plaintiffs' expert witness Professor Schmalensee defined the tying product market as "all system software that will execute the NOVA instruction set," on the grounds that "only such software can be used with the CPUs in the tied product market," which is in turn defined as "CPUs that execute the NOVA instruction set."[27] The circularity of this reasoning is obvious. The only characteristic shared by the different types of software in this tying product market is their compatibility with NOVA CPUs and NOVA emulators. Virtually all of the evidence offered by plaintiffs in this case, however, has focused on the fact that the consideration foremost in the minds of purchasers is whether the software will be compatible with their existing applications programs. A Data General customer who has written application programs to run with RDOS can no more easily convert his program to run with another type of software within the NOVA instruction set submarket than he can convert it to run with a type of operating software outside of the NOVA instruction set submarket. Indeed, the testimony clearly indicates that plaintiffs' "principle" of submarket definition is simply to include those products and firms most directly aggrieved by defendant's tie and to exclude other competitive alternatives which do not seem to be adversely affected.

[27] RT 3534-3540.

Schmalensee, RT 3534-3540. This kind of evidence does not support a finding that the "NOVA instruction set" submarket is an economically significant market, under the principles of *Brown Shoe*.

Plaintiffs have emphasized the fact that the tying product market found by the jury was based not on the principle of lock-in, but rather on the principle of compatibility with the NOVA instruction set, and that the submarket was not limited to Data General's software, and included software manufactured by companies such as IPI (BLIS/COBOL), Point Four (IRIS), Dynamic Concepts (BITS), RMD and Associates (VMOS), Izhar Shy Industries (IOS), Minicomputer Systems (MICOS), and Fairchild (IMDOS). An examination of the record reveals that plaintiffs' evidence in this case has focused almost exclusively on the "locked-in" Data General customer, and on "lock-in" both as a source of economic power and as a principle of market definition. In explaining the justification for a "NOVA instruction set" submarket, for example, Professor Schmalensee stressed the fact that buyers who are "locked-in" to RDOS-based applications programs cannot economically switch to non-NOVA type CPUs because such CPUs could not run with RDOS. And at the close of the case, plaintiffs' counsel argued:

> "But as so many of the customer witnesses told you, from their hearts, and expert witnesses as well explained, none of that matters at all to the appreciable number of customers who are locked in to the continued use of defendant's systems software. For them the reality is that the only available choices are in the market of those vendors who have created operating systems software that runs with NOVA instruction set machines. In that marketplace there's just no question that the operating system known as RDOS is the operating system not only of choice, but of absolute need." RT 7627, lines 4-15.
>
> "Members of the jury, this is a case in which the uniqueness rises to the level of necessity for the substantial number of customers who have written their application

programs to run with the defendant's operating system software.

Those, who have been referred to in this case, and have been referred to by everyone, as the committed or the locked-in customers, for them, there is just nothing else that can come close to providing an adequate substitute for defendant's operating system software." RT 7635, line 16—7636, line 1.

Under the "lock-in" theory, the market is defined not in terms of the competitive alternatives available to the potential customer when he makes his initial decision to purchase, but rather after the customer has already decided to purchase RDOS, and has thereafter become committed to that product. Such an approach to market definition is untenable, and submarkets based on customer commitment to a given product have been rejected by other courts as too narrow as a matter of law.[28] Moreover, the Court notes that the evidence does not support a submarket composed of Data General's locked-in customers because of proof that: (1) new customers, and old customers with new applications, are not insulated from the competitive forces of the larger market, and a vendor's inability to discriminate between old and new customers insures old customers the benefits of competition in the larger market; and (2) old customers' competition at the resale level with OEMs offering other vendors' products insures that Data General's sales to all customers are directly affected by competition in the general market.

Moreover, a reasonable jury could not find, on the basis of the evidence presented, that Data General had sufficient economic power in the tying product market appreciably to restrain trade in the tied product market, even if the relevant markets were defined in terms of the NOVA instruction set. Plaintiffs' evidence on this issue consists of testimony by Data General's competitors (*see, e.g.*, RT 1962-1963, 3983, 1372-1373) alleging that NOVA emulator manufacturers could have sold more CPUs if not for the existence of the tying arrangement; by Data General customers, who indicated that the licensing restrictions precluded them from using non-Data General CPUs (*see, e.g.*, RT 840, 950-954, 1084, 1092, 1932-1933); and by Professor Schmalensee's opinion that the tie appreciably restrained competition in the NOVA emulator market. RT 3534.

[28] *See, e.g., Kaplan v. Burroughs Corp.*, 611 F.2d 286, 293-95 (9th Cir. 1979), *cert. denied*, 447 U.S. 924, 100 S. Ct. 3016, 65 L.Ed.2d 1116 (1980); *General Business Systems v. North American Phillips Corp.*, 1980 Trade Cases ¶ 63,607 (N.D. Cal. 1980); *Reisner v. General Motors Corp.*, 511 F. Supp. 1167 (S.D.N.Y. 1981); *ILC Peripherals v. IBM Corp.*, 458 F. Supp. 423, 427 (N.D. Cal. 1978), *aff'd* 636 F.2d 1188 (9th Cir. 1980); *Telex Corp. v. IBM Corp.*, 510 F.2d 894, 917 (10th Cir. 1975), *cert. denied*, 423 U.S. 802, 96 S. Ct. 8, 46 L.Ed.2d 244 (1975).

Evidence that Data General's competitors were unsatisfied with their sales of NOVA emulators, and conclusory statements that Data General's marketing practices were the cause of their alleged lack of success, simply cannot, without more, establish that defendant appreciably restrained competition by exercising its leverage in the software market. Fundamentally, plaintiffs have not presented evidence demonstrating that their alleged inability to compete with Data General's NOVAs is attributable to the software licensing restrictions rather than to their failure to meet the standards set by Data General with regard to such factors as the quality of the CPUs, the level of field service available, the ability to provide single-vendor accountability, and marketing strategies. In short, plaintiffs have not demonstrated that competitors provided viable alternatives for customers who ultimately purchased Data General's NOVA CPUs. Neither of the plaintiffs has presented evidence showing that customers would rather buy an emulator CPU and pay a reasonable software license charge to license Data General's operating systems software, than to buy a NOVA CPU and license Data General's software under its current terms, conditions, and prices. Indeed, one of plaintiffs' customer witnesses testified that if he had to pay $2,000 to license Data General's software, he would not purchase Fairchild hardware. RT 1277.

The Court emphasizes the point, explained in its discussion above of "lock-in" as a source of economic power, that the time

at which competition in a relevant market should be assessed is the point at which the customer makes his initial decision to purchase, and not after he has already made his decision and become committed to a particular product. Even in the so-called "NOVA instruction set" submarket, the customer has available to him a variety of competitive alternatives, and plaintiffs have failed to demonstrate that Data General's tying practices deprived such customers of the benefits of competition. Moreover, as noted in the discussion above, competitors were not prevented from developing the software necessary for them to offer a viable CPU product or from procuring such software from a third-party supplier; indeed, the evidence shows that non-Data General NOVA-compatible software has been used with SCI's and Digidyne's CPUs. RT 471-475, 1845-1846.

IV

In deciding to grant defendant's motion for judgment *non obstante veredicto,* the Court has considered all of the evidence presented in the light most favorable to the plaintiffs. Plaintiffs' arguments in support of the jury verdict may be briefly reiterated as follows: (1) evidence as to the relevant product market is not required in a *per se* tying case; (2) if a relevant market must be defined, the relevant market for the tying product consists of software which will execute the NOVA instruction set, and the relevant market for the tied product consists of CPUs which will execute the NOVA instruction set; (3) Data General possessed sufficient economic power within the relevant tying product market appreciably to restrain competition in the relevant tied product market because (a) software lock-in gives Data General power over price, by enabling it to impose discriminatory prices and terms upon its locked-in customers, or alternatively, to impose uniformly higher prices and burdensome terms upon all customers; and (b) RDOS is unique because it is the only software which can reasonably be used by Data General's locked-in customers, and competitors are prevented from offering the unique product, *i.e.,* software which is comparable or functionally equivalent because of the barriers described above; and, finally, (4) Data

General's power in the relevant tying market enables it appreciably to restrain competition in the relevant tied product market.

The Court finds a critical failure of proof as to three critical aspects of the jury verdict. First, the Court finds that, on the basis of the evidence presented in this case, the only reasonable definition of the relevant market for the tied product is the market for general purpose minicomputers and microprocessors. Second, the evidence cannot reasonably support a finding that Data General possessed economic power within the general market for the tying product, nor even that it possessed such power in the submarket of the NOVA-compatible software. Third, there is no evidence from which a reasonable jury could conclude that Data General's tying practices appreciably restrained competition in the general market for the tied product, or even that it imposed significant restraints upon competition in the submarket for NOVA emulators.

Accordingly, IT IS HEREBY ORDERED that:

1. Defendant's motion for judgment *non obstante veredicto* is granted and defendant's motion for a new trial is conditionally granted.[29]

2. Plaintiff's application for an injunction and motion for a trial on the issue of damages are denied.

3. Defendant's motion to expunge certain statements from the record is denied.

4. All applications for further discovery on the damages issue are denied.

5. No motion or motions for reconsideration will be entertained.

6. Judgment will be entered accordingly.

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[29] The Court may grant defendant's motion for a new trial conditionally, even if the verdict is supported by substantial evidence, if the verdict is contrary to the clear weight of the evidence or results in a miscarriage of justice. *Murphy Tugboat v. Crowley,* 467 F. Supp. 841 (N.D. Cal. 1978), *aff'd,* 658 F.2d 1256 (9th Cir. 1981); *Inglis v. ITT Continental Baking Co.,* 652 F.2d 917 (9th Cir. 1981).

APPENDIX C

In re DATA GENERAL CORPORATION ANTITRUST LITIGATION.

M.D.L. No. 369 WHO.

United States District Court, N. D. California.

March 7, 1980.

OPINION

[Granting Partial Summary Judgment]

ORRICK, District Judge.

Before the Court are seven actions challenging the manner in which Data General Corporation ("Data General") markets its computer equipment. Three of the actions were originally filed in this district[1] and four were transferred here by the Judicial Panel on Multidistrict Litigation ("The Panel") for consolidated or coordinated pretrial proceedings.[2]

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[1] *Fairchild Camera & Instrument Corp. v. Data General Corp.*, No. C-78-2418 (N.D. Cal., filed Oct. 1978); *SCI Systems, Inc. v. Data General Corp.*, No. C-78-2417 (N.D. Cal., filed Oct. 1978); *Digidyne Corp. v. Data General Corp.*, No. C-78-1261 (N.D. Cal., filed June 1978).

[2] In May, 1979, the Panel transferred three actions to this Court: *Bytronix Corp. v. Data General Corp.*, No. 78-3832-RF (C.D. Cal., filed Oct. 1978); *Data General Corp. v. Ampex Corp.*, No. 79-1247 (D.N.J., filed Aug. 1978); *Data General Corp. v. Ampex Corp.*, No. 77-0636 (D.N.J., filed Mar. 1977). In June, 1979, the Panel conditionally transferred here *Data Compass Corp. v. Data General Corp.*, No. 79-1784-AA (C.D. Cal., filed Feb. 1979).

In November, 1979, the Panel conditionally transferred here three additional actions: *Data General Corp. v. Data National Corp.*, No. 78-2869-K (D. Mass., filed Nov. 1978); *Data General Corp. v. Ampex Corp.*, No. 79-1342-MRP (C.D. Cal., filed Apr. 1979); *Data General Corp. v. Ampex Corp.*, No. 79-193-T (D. Mass., filed Jan. 1979). Because those three actions were transferred here after the filing of the cross-motions for summary judgment that are the subject

Plaintiffs[3] claim that, among other things, Data General ties the licensing of its software to the sale of its central processing units in violation of § 1 of the Sherman Act, 15 U.S.C. § 1 (hereinafter cited as "Sherman § 1") and § 3 of the Clayton Act, 15 U.S.C. § 14 (hereinafter cited as "Clayton § 3"). In addition, plaintiff Ampex Corporation ("Ampex") claims that Data General unlawfully ties the sale of its central processing units to the sale of its memory boards.

Following more than a year of discovery encompassing the production of over 600,000 documents, the taking of nearly 150 depositions and the exchange of hundreds of interrogatories and requests for admission, the parties filed cross-motions for summary judgment in accordance with the briefing procedures outlined in § 3.30 of the Manual for Complex Litigation ("the Manual").[4] Plaintiffs contend that Data General's tying

of this Opinion, the Court's rulings herein do not apply directly to those actions. The seven actions which are directly affected by this Opinion will hereinafter be referred to collectively, unless otherwise noted.

[3] In five of the seven consolidated actions, Data General is aligned as the sole defendant. In the remaining two actions (both of which were brought by Data General against Ampex), Data General is nominally the plaintiff. Because all of the antitrust claims place Data General in a defense posture, Data General will be referred to herein as the defendant and all of the non-Data General parties will be referred to collectively as the plaintiffs.

[4] Section 3.30 of the Manual directs the moving party to submit separate narrative statements of each of the facts and legal contentions on which it relies. The opposing party must admit or deny each factual statement and respond to each legal contention. Plaintiffs initially submitted 77 factual statements and 25 legal contentions. Supporting each factual statement were fact citations and evidentiary documents from which the citations were excerpted. Data General responded with direct responses, factual assertions, and comments addressed to each factual statement and with a brief addressed to the legal issues. In support of its cross-motion for summary judgment, Data General submitted 163 factual statements, 52 legal contentions, and another brief. The documents submitted to substantiate its factual statements and assertions included a compilation of 59 affidavits and declarations and 3 volumes of tabbed evidentiary materials. Each side then responded to the other's first-round submissions. Supplementary fact citations, affidavits and declarations, and evidentiary materials were filed. In addition, plaintiffs Ampex, Bytronix, and Data Compass submitted separate briefs, affidavits, and evidentiary support.

arrangements possess each of the elements of *per se* tying violations. Data General argues that it lacks the requisite economic power in the tying product markets and therefore no tying violation can be shown. The Court has painstakingly reviewed the voluminous record and finds, for reasons set forth below, that there exist genuine issues of material fact sufficient to preclude summary judgment in favor of either plaintiffs or defendant. The parties must proceed to trial limited to the question whether Data General possesses sufficient economic power in the tying product markets appreciably to restrain competition in the tied product markets.

I

A

All of the parties to this litigation are corporations engaged in the design, manufacture and/or marketing of computer equipment. The items in issue are central processing units ("CPUs"), peripheral products, including memory devices, and operating systems software. CPUs process data. Peripheral products translate data from human-readable to machine-readable form, and vice versa, in conjunction with CPUs' data processing activities. Memory devices receive, store, and supply data. CPUs, peripheral products, and memory devices are "hardware" items and each is separately plugged into the computer chassis. Computer programs, known generally as "software," tell the hardware items which tasks to perform. Operating systems software provides the basic instructions for the operation of a computer in any practical application. Applications software is designed to perform specific data processing tasks. Operating systems software essentially serves as the liaison between the applications software and the hardware.[5]

[5] The software items in issue here are operating systems software. Unless otherwise noted, the term "software" will refer hereinafter to operating systems software.

Data General manufactures and markets all of the items in issue here: CPUs, peripheral products, memory devices, and software. Data General's CPUs bear the trademark "NOVA." All of the plaintiffs, except Data Compass Corporation ("Data Compass"), manufacture CPUs and market them in competition with Data General's NOVA CPUs. Most of the plaintiffs do not manufacture all of the other hardware and software items which together comprise a complete computer system.[6] Plaintiffs' CPUs are designed to be capable of functioning (whether as is or as modified) with the software which Data General makes available for use with its NOVA CPUs; they are sometimes referred to as "NOVA emulators."[7] The obvious object of plaintiffs' marketing strategy is to offer consumers the option of assembling a multi-brand computer system composed of CPUs manufactured by plaintiffs and memory devices, peripheral products, and software provided by Data General or other computer companies. In addition, plaintiff Ampex competes with Data General in the sale of memory devices as well as CPUs. Ampex aims to sell its memory boards to customers who buy their CPUs from Data General, from Ampex or from third parties.

This litigation focuses on three of Data General's marketing practices. First, Data General makes its software available pursuant to a Program License Agreement which precludes the licensee from using Data General's software with any CPUs not designated by Data General. With two exceptions not relevant here, Data General has only designated its own CPUs for use

[6] Two plaintiffs are involved in the software market. Fairchild has developed software specifically for use with the CPUs which it manufactures. Data Compass develops its own software, but markets it along with CPUs which it purchases from Data General. A third plaintiff SCI is in the process of developing software for use with its CPUs.

[7] Data General claims that plaintiffs misappropriated its trade secrets and proprietary information in the development of their NOVA-emulating CPUs. The trade secrets issues will be litigated immediately following the resolution of the antitrust issues.

with its licensed software.[8] Second, Data General requires its software licensees to purchase a minimum amount of Data General's hardware (*i.e.*, a "minimum equipment configuration" of memory devices and peripheral products) or to pay a license charge. Third, Data General requires initial purchasers of its CPUs to purchase a minimum amount of memory equipment.[9]

B

This Court's involvement in what is now complex, multiparty litigation began with the filing here of a simple, two-party, trade secrets case in June, 1978. Digidyne Corporation ("Digidyne") sued Data General alleging that Data General was misrepresenting that Digidyne had appropriated its trade secrets and proprietary information. Digidyne sought a declaratory judgment that it had not done so, as well as substantial compensatory and punitive damages. Data General responded with a counterclaim alleging misapropriation of trade secrets, copyright infringement, inducement of breach of contract, unfair competition, and interference with prospective advantage. When Digidyne amended its complaint to allege antitrust violations (unlawful tying arrangements in violation of Sherman § 1 and Clayton § 3, and attempt to monopolize in violation of § 2 of the Sherman Act, 15 U.S.C. § 2), the framework within which the larger litigation eventually developed was thereby established. In broad outline: Data General has separately charged Digidyne, Fairchild Camera and Instrument Corporation ("Fairchild"), SCI Systems, Inc. ("SCI"), and Ampex with misappropriation of trade secrets and related state law violations; each of these companies as well

[8] Data General has approved the use of its software with CPUs manufactured by ROLM Corporation and Nippon Minicomputer Corporation, neither of whose computer products compete with products offered by Data General in the United States and Europe. Data General has refused requests from other manufacturers to license its software for use with their CPUs. Data General's factual assertion in response to plaintiffs' fact statement II,A,3.

[9] Data General will also sell CPUs on a replacement basis from its spare parts list. *See* Section IV,A,2, *infra*.

as Bytronix Corp. ("Bytronix"), claims that Data General is liable for antitrust violations, notably unlawful tying practices. The action involving Data Compass differs somewhat from the others insofar as Data General's counterclaims focus on alleged breaches of contract rather than misappropriation of trade secrets.

Once it appeared that the simple trade secrets case had become neither simple nor primarily a trade secrets case, the Court assumed the supervisory role recommeded by the Manual. The case was first broken into its two major substantive components. Discovery and pretrial preparation have proceeded solely on the antitrust issues, while discovery regarding the trade secrets and related issues has been temporarily stayed. The antitrust part of the case was further bifurcated for pretrial and trial purposes into separate determinations of liability and damages.

II

A

Antitrust law treats tying arrangements harshly. Proof that a tying arrangement possesses certain critical elements will render it illegal *per se* under Sherman § 1, Clayton § 3, or both. The Supreme Court initially applied the *per se* rule to tying arrangements in 1947, *International Salt Co. v. United States,* 332 U.S. 392, 68 S. Ct. 12, 92 L.Ed. 20 (1947), and has repeatedly reaffirmed that holding. *See, e.g., United States Steel Corp. v. Fortner Enterprises, Inc.,* 429 U.S. 610, 612 n.1, 97 S. Ct. 861, 863 n.1, 51 L.Ed.2d 80 (1977) (hereinafter cited as "*Fortner II*"); *Fortner Enterprises, Inc. v. United States Steel Corp.,* 394 U.S. 495, 498-99, 89 S. Ct. 1252, 1256, 22 L.Ed.2d 495 (1969) (hereinafter cited as "*Fortner I*"); *Northern Pacific Ry. Co. v. United States,* 356 U.S. 1, 8, 78 S. Ct. 514, 519, 2 L.Ed.2d 545 (1958). The oft-quoted rationale for subjecting tying arrangements to the *per se* rule is as follows:

> "[T]here are certain agreements or practices which because of their pernicious effect on competition and lack of

> any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use. This principle of *per se* unreasonableness not only makes the type of restraints which are proscribed by the Sherman Act more certain to the benefit of everyone concerned, but it also avoids the necessity for an incredibly complicated and prolonged economic investigation into the entire history of the industry involved, as well as related industries, in an effort to determine at large whether a particular restraint has been unreasonable—an inquiry so often wholly fruitless when undertaken.
>
> * * * *
>
> For our purposes a tying arrangement may be defined as an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier. Where such conditions are successfully exacted competition on the merits with respect to the tied product is inevitably curbed. Indeed 'tying agreements serve hardly any purpose beyond the suppression of competition.' *Standard Oil Co. of California [and Standard Stations] v. United States,* 337 U.S. 293, 305-306 [69 S. Ct. 1051, 1058, 93 L.Ed. 1371]. They deny competitors free access to the market for the tied product, not because the party imposing the tying requirements has a better product or a lower price but because of his power or leverage in another market. At the same time buyers are forced to forego their free choice between competing products." *Id.* at 5-6, 78 S. Ct. at 518 (footnote omitted).

B

Plaintiffs must establish three elements in order to make out a *per se* violation of Sherman § 1. First, there must be two separate products, with the purchase of one (the "tying product") conditioned upon the purchase of the other (the "tied

product"). Second, the seller must possess sufficient economic power in the tying product market appreciably to restrain competition in the tied product market. Third, a not insubstantial amount of commerce in the tied product market must be affected. *Fortner I, supra,* 394 U.S. at 499, 89 S. Ct. at 1256, quoting *Northern Pacific Ry. Co. v. United States, supra,* 356 U.S. at 6, 78 S. Ct. at 518; *Moore v. Jas. H. Matthews & Co.,* 550 F.2d 1207, 1212 (9th Cir. 1977).

It was traditionally understood that a tying arrangement would run afoul of Clayton § 3 if it satisfied the first and either the second or the third of the elements required under the Sherman Act. *Times-Picayune Publishing Co. v. United States,* 345 U.S. 594, 608-09, 73 S. Ct. 872, 880, 97 L.Ed. 1277 (1953). Recently, however, the neat distinction between tying arrangements that violate Sherman § 1 and those that violate Clayton § 3 has faded beyond recognition. The Ninth Circuit has indicated that the requisite elements under the two statutes are now "virtually identical." *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1214. *See also* von Kalinowski, 9 Antitrust Laws and Trade Regulation § 64.05[2] at 64-91 (1979). However, it has not been clearly stated whether the differences between the two standards were resolved in favor of the more stringent Sherman Act requirements, the less stringent Clayton Act requirements, or a new set of requirements. *Moore* suggests that all three Sherman Act elements now govern in both contexts inasmuch as the Ninth Circuit proceeded directly from the statement that the Sherman § 1 and Clayton § 3 standards are practically indistinguishable to the statement that all three elements must be satisfied under Sherman § 1. If the same standards apply under both statutes, and the Sherman Act requires all three elements, then the inescapable conclusion by which this Court is guided is that the Clayton Act also requires all three elements.[10] In one of the few opinions to address this

[10] In light of this conclusion, it is unnecessary to reach Data General's contention that computer software is not "goods, wares, merchandise, machinery, supplies or other commodities" within the scope of the Clayton Act.

precise issue, the Fifth Circuit has reached the same conclusion. *Spartan Grain & Mill Co. v. Ayers,* 581 F.2d 419, 428 (5th Cir. 1978).

C

Three caveats accompany the general rule that a tie-in is illegal *per se* when it involves (1) separate products sold together (2) by a seller with economic power in the tying product market and (3) a not insubstantial amount of commerce in the tied product market is affected.

First, plaintiffs must do more than prove the three elements. In order to recover under the Sherman and Clayton Acts, 15 U.S.C. § 15, plaintiffs must also prove that they were in fact damaged. *Gray v. Shell Oil Co.,* 469 F.2d 742, 749 (9th Cir. 1972), *cert. denied,* 412 U.S. 943, 93 S. Ct. 2773, 37 L.Ed.2d 403 (1973). They must show that they have suffered *some* actual injury and that their injury was causally linked to defendant's antitrust violation. *Knutson v. Daily Review, Inc.,* 548 F.2d 795, 811 (9th Cir. 1976), *cert. denied,* 433 U.S. 910, 97 S. Ct. 2977, 53 L.Ed. 2d 1094 (1977).[11]

Second, some courts have carved limited inroads into the rigid *per se* rule by recognizing exceptional circumstances in which business justifications render lawful a tie-in that otherwise possesses the requisite elements of *per se* illegality. *See,*

[11] It has occasionally been stated that plaintiffs must satisfy two additional requirements in order to prove an illegal tie-in. That is, they must show that the seller of the tying product has an economic interest in the tied product and that buyers have been subjected to "some modicum of coercion." *Moore v. Jas. H. Matthews & Co.,* 550 F.2d 1207, 1216 (9th Cir. 1977). However, these factors have not been generally recognized as additions to the governing three-part (plus fact of damage) test. Rather, they are taken into account in the context of the separate products and economic power issues. *See, e.g., Bogosian v. Gulf Oil Corp.,* 561 F.2d 434, 449-50 (3d Cir. 1977), *cert. denied,* 434 U.S. 1086, 98 S. Ct. 1280, 55 L.Ed.2d 791 (1978); *Hill v. A-T-O,* Inc., 535 F.2d 1349, 1355 (2d Cir. 1976); *BBD Transportation Co. v. United States Steel Corp.,* 1976-2 Trade Cas. ¶61,079 at 69,874 (N.D. Cal. 1976) (CCH).

e.g., Susser v. Carvel Corp., 332 F.2d 505, 520 (2d Cir. 1964), *cert. dismissed,* 381 U.S. 125, 85 S. Ct. 1364, 14 L.Ed.2d 284 (1965); *Baker v. Simmons Co.*, 307 F.2d 458 (1st Cir. 1962); *United States v. Jerrold Electronics Corp.*, 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam,* 365 U.S. 567, 81 S. Ct. 755, 5 L.Ed.2d 806 (1961). Although both the Supreme Court and the Ninth Circuit have noted in *dicta* that business justifications may "save" a tie-in, *Fortner I, supra,* 394 U.S. at 506, 89 S. Ct. at 1260; *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1217, neither court has held that any particular tie-in would have violated the antitrust laws but for legitimate business justifications.[12]

Third, the assessment of the legality of a tying arrangement does not necessarily end with a finding that some or all of the elements of a *per se* violation are absent. A tying arrangement may nonetheless contravene Sherman § 1 under the rule of reason test. *Fortner I, supra,* 394 U.S. at 499-500, 89 S. Ct. at 1257. At the present stage of this litigation, plaintiffs rely on the *per se* rule and have not attempted to show that Data General's alleged tying arrangements create an unreasonable restraint of trade. Therefore, this Opinion is addressed solely to the question whether Data General's alleged tying arrangements are illegal *per se.*

[12] Some courts have evaluated alleged business justifications in the course of determining whether each of the requisite elements has been established (most asserted justifications pertain to the separate products issue). Other courts view such justifications as affirmative defenses to be taken into account after all of the elements have been separately considered. The Ninth Circuit has employed the latter approach in two of its leading tie-in cases. *Moore v. Jas. H. Matthews & Co., supra* n.11; *Siegel v. Chicken Delight, Inc.*, 448 F.2d 43 (9th Cir. 1971), *cert. denied,* 405 U.S. 955, 92 S. Ct. 1172, 31 L.Ed.2d 232 (1972). Under this approach, the defendant bears the burden of proving that his case fits within the narrow contours of the business justification defense. *Advance Business Systems & Supply Co. v. SCM Corp.*, 415 F.2d 55, 68 n.12 (4th Cir. 1969), *cert. denied,* 397 U.S. 920, 90 S. Ct. 928, 25 L.Ed.2d 101 (1970); *Anderson Foreign Motors v. New England Toyota Distributors,* 475 F. Supp. 973, 981 (D. Mass. 1979).

III

A

Summary judgment is appropriate where "there is no genuine issue as to any material fact and * * * the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). At the core of the disposition of a motion for summary judgment is the determination of which issues are "genuine" and which facts are "material." A genuine issue exists where "sufficient evidence supporting the claimed factual dispute [is] shown to require a jury or judge to resolve the parties' differing versions of the truth at trial." *First National Bank of Arizona v. Cities Service Co.*, 391 U.S. 253, 288-89, 88 S. Ct. 1575, 1592, 20 L.Ed.2d 569 (1968). A material fact is one which, under applicable principles of substantive law, must exist in order to support a judgment in favor of the moving party. *Sherman v. British Leyland Motors, Ltd.*, 601 F.2d 429, 439 (9th Cir. 1979).

The moving party bears the burden of establishing the absence of any genuine issue of material fact. In determining whether that burden has been satisfied, all evidence and inferences are to be viewed in a light favorable to the party opposing the motion. *Catalano, Inc. v. Target Sales, Inc.*, 605 F.2d 1097, 1101 (9th Cir. 1979), citing *Mutual Fund Investors v. Putnam Management Co.*, 553 F.2d 620, 624 (9th Cir. 1977).

After Justice Clark wrote that "summary procedures should be used sparingly in complex antitrust litigation," *Poller v. Columbia Broadcasting Co.*, 368 U.S. 464, 473, 82 S. Ct. 486, 491, 7 L.Ed.2d 458 (1962), district courts have shied away from the use of Rule 56 in antitrust cases. However, it is well established that "summary judgments have a place in the antitrust field, as elsewhere," *White Motor Co. v. United States,* 372 U.S. 253, 259, 83 S. Ct. 696, 700, 9 L.Ed.2d 738 (1963), and that the *Poller* warning was concerned primarily with cases, typically involving conspiracy allegations, "where motive and intent play leading roles, the proof is largely in the hands of the alleged conspirators, and hostile witnesses thicken the plot." *Poller v. Columbia Broadcasting Co., supra,* 368 U.S. at 473, 82

S. Ct. at 491; *White Motor Co. v. United States, supra,* 372 U.S. at 259, 83 S. Ct. at 699. Furthermore, summary judgment has been explicitly sanctioned for use in antitrust cases involving alleged *per se* violations where the law is well developed and "the gist of the case turns on documentary evidence." *Id.*

> "Where there is conspiracy or attempt to monopolize, courts do require proof of specific intent, and this normally involves trial. We have no such requirement in *tying* cases." *Capital Temporaries, Inc. of Hartford v. Olsten Corp.,* 506 F.2d 658, 667 (2d Cir. 1974) (citation omitted, emphasis added).

B

Where the parties submit summary judgment motions but the Court determines that a final judgment cannot be rendered without proceeding to trial, Rule 56(d) directs the court to specify the material facts that have been established beyond dispute and those that remain in dispute.

> "If on motion under this rule judgment is not rendered upon the whole case or for all the relief asked and a trial is necessary, the court at the hearing of the motion, by examining the pleadings and the evidence before it and by interrogating counsel, shall if practicable ascertain what material facts exist without substantial controversy and what material facts are actually and in good faith controverted. It shall thereupon make an order specifying the facts that appear without substantial controversy, including the extent to which the amount of damages or other relief is not in controversy, and directing such further proceedings in the action as are just. Upon the trial of the action the facts so specified shall be deemed established, and the trial shall be conducted accordingly."

The purpose of a Rule 56(d) order, which is analogous to a pretrial order under Rule 16, is to salvage all constructive

results of summary judgment proceedings. 6 Pt. 2 Moore's Federal Practice ¶56.20[1] at 56-1203 (1979).[13]

The Ninth Circuit has expressly approved the use of Rule 56(d) and rejected the contention that the procedure infringes the litigants' right to a jury trial. In *Diamond Door Co. v. Lane-Stanton Lumber Co.,* 505 F.2d 1199 (9th Cir. 1974), petitioners in a bankruptcy proceeding moved for summary judgment on their claim that the alleged bankrupt had, while insolvent, made a preferential transfer in violation of the bankruptcy statute. Six elements had to be established in order to make out the alleged violation. The district court ruled that five of those elements were established beyond dispute and that genuine issues of material fact existed only with respect to the sixth element (whether the alleged bankrupt was insolvent at the time of the transfer). Pursuant to Rule 56(d), the court entered an order on the basis of the five elements that had been established and called for a jury trial to determine the sole remaining issue (*i.e.,* insolvency). The alleged bankrupt argued on appeal that the procedure violated his right to a jury trial. The Ninth Circuit held that the use of Rule 56(d) was proper, the procedure did not invade the jury's province because summary adjudication was only rendered upon the facts that were undisputed, and the record fully supported the district court's determination that there was no genuine issue of material fact with respect to five of the six elements of the alleged violation. *Id.* at 1203-06.

In the antitrust context, the Ninth Circuit has also sanctioned procedures which, like Rule 56(d), require the trial court to adjudicate some of the elements of a claim and submit only

[13] Although Rule 56(d) practice is occasionally described as "partial summary judgment," that term is a misnomer where, as here, no final judgment is rendered and the parties must proceed to trial. *Diamond Door Co. v. Lane-Stanton Lumber Co.,* 505 F.2d 1199, 1202 (9th Cir. 1974). *See also* 6 Pt. 2 Moore's Federal Practice ¶56.20[3-1] at 56-1214 (1979).

the remaining elements to the jury. *Siegel v. Chicken Delight, Inc.*, 448 F.2d 43 (9th Cir. 1971), *cert. denied*, 405 U.S. 955, 92 S. Ct. 1172, 31 L.Ed.2d 232 (1972), involved the claim by a class of franchisees that their franchisor, Chicken Delight, imposed unlawful tying restrictions. After the case was presented—but before it was submitted—to the jury, plaintiffs moved for a directed verdict. The district court ruled in plaintiffs' favor on the three elements of the alleged tying violation and on the fact of damage element and sent only one issue—whether the tie-in was justified—to the jury. The jury found that the tie-in was not justified and judgment was rendered for the plaintiffs. The Ninth Circuit affirmed the finding of liability, remanded for a new trial on the damages issue, and neither stated nor suggested any objections to the procedures employed by the trial court.

In conformity with Rule 56(d) and the relevant case law, this Court has attempted to salvage all constructive results of the monumental efforts the parties have invested in these summary judgment proceedings. As elaborated below, the tying violations alleged here involve five issues: (1) whether there are tie-ins involving two separate products; (2) whether Data General possesses sufficient economic power in the tying product markets to restrain competition in the tied product markets; (3) whether the tie-ins affect a not insubstantial amount of commerce in the tied product markets; (4) whether plaintiffs were damaged by the tie-ins; and (5) whether business reasons justify the otherwise unlawful tie-ins. The record contains genuine issues of material fact with respect to the economic power issue regarding both alleged ties. However, the Court finds that there are no genuine issues of material fact with respect to the other four issues (Nos. 1, 3, 4, and 5 as listed above). Thus, the cross-motions for summary judgment must be denied and the parties must proceed to jury trial on the economic power issue.

IV

Having set out the legal standards governing both the proof of a *per se* tying violation and the use of summary judgment procedures, the Court must now apply that law to the facts of this case. The remainder of this Opinion will be structured as follows: for each of the three requisite elements of a *per se* tying violation, the additional fact of damage element, and the asserted defense of business justifications, the Court will first state the facts which under the substantive law it deems to be material and then discuss whether the record contains or lacks a genuine issue with respect to the facts material to each of the two alleged tie-ins.

A

In determining whether two items are separate products or components of a single product, the Court is to focus on the "function of the aggregation." *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1215; *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 48. Among the subsidiary considerations to be taken into account are "whether the amalgamation of products resulted in cost savings apart from those reductions in sales expenses and the like normally attendant upon any tie-in, and whether the items are normally sold or used as a unit with fixed proportions." *Id.* Unless such factors are present, a finding of separate products is generally warranted. *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1215.

1

Turning first to Data General's alleged tie-in between operating systems software (tying product) and CPUs (tied product), it is clear that neither item can function without the other.[14] However, the relevant inquiry is not whether the two

[14] Data General's fact statement 4(a) (see also Data General's factual assertion (b)(1) in response to plaintiffs' fact statement I,A,1); plaintiffs' reply to defendant's fact contentions at 6-7 (failure to deny statement 4(a)).

items must be used together but whether they must come from the same seller. *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 49.

Data General's own marketing practices refute the suggestion that the software and the CPU used in a particular computer system must necessarily be manufactured by the same company. First, Data General admits that it sells CPUs without requiring the purchaser to obtain Data General software for use therewith.[15] Second, Data General admits that its "price lists contain separate prices for its hardware and software and Data General charges the listed prices for the items of hardware and software which are described."[16] Third, Data General admits that, until the summer of 1978, the persons responsible for marketing software were different from those responsible for marketing hardware.[17]

The marketing practices of others in the industry also establish that software and CPUs need not be manufactured by the same company. Numerous companies market software alone, to be used with CPUs such as Data General's NOVA products.[18] Numerous companies, including several of the plaintiffs, market CPUs alone, to be used with software such as that licensed by Data General.[19] "Hundreds to thousands" of

[15] Data General's response to plaintiffs' fact statement II, A,2.

[16] Data General's factual assertion (b) in response to plaintiffs' fact statement II,B,6.

[17] Deposition of Robert Kiburz, Data General's Eclipse Data Systems marketing manager, quoted at plaintiffs' fact citations II-B(1), tab 7.

[18] Data General's supp. interrog. ans. (lst set), No. 11, dated May 11, 1979, quoted at plaintiffs' fact citations II-B(4), tab 18; affidavit of James Burkhard, vice president of Baron Data Systems.

[19] Data General's supp. interrog. ans. (lst set), No. 20, dated May 11, 1979, quoted at plaintiffs' supp. fact citations II-B, tab 6; affidavit of Stephen R. Steinberg, attorney for Data General, quoted at plaintiffs' fact citations I-B, tab 1. There is a genuine issue of fact concerning whether plaintiffs' CPUs are functionally equivalent to Data General's CPUs (*i.e.,* whether they are fully compatible with Data General's software). *Compare* plaintiffs' fact statement I,B,8, and citations referenced therein, with Data General's factual assertions in response thereto, and evidentiary materials cited therein. Although this dispute is material to the determination of the extent of plaintiffs' damages—a factual determination to be made by the jury at trial—it is not material to the question whether software and CPUs are separate products. For purposes of establishing separate products, the dispositive facts regarding "compatibility" are not in dispute: numerous companies market CPUs, in competition with Data General's NOVA CPUs, for use with Data General's software.

companies are engaged in the business of buying CPUs from one company and peripheral equipment from others, developing software, and then selling the integrated system as a package.[20] At least three companies that market both software and CPUs make their software available on an "unbundled" basis—*i.e.,* without also requiring the purchase of their own CPUs.[21]

[20] Deposition of Stephen Gaal, Data General's North American manager, systems engineering, quoted at plaintiffs' fact citations II-B(4), tab 17.

[21] Data General claims that "plaintiffs have offered no evidence that CPU manufacturers other than Data General have in fact licensed (as distinguished from offering to license) operating systems software for use on competing CPUs." Data General's factual assertion (a) in response to plaintiffs' fact statement II,B,9. However, Data General's own submissions acknowledge that both IBM and Intel have in fact licensed their software for use on other companies' CPUs. Data General's factual assertion (b)(5) in response to plaintiffs' fact statement II,B,9 (re IBM); deposition of Edson D. de Castro, Data General's president, quoted at plaintiffs' fact citations II-B(4), tab 16 (re IBM); deposition of Roger Borovoy, Intel's general counsel, quoted at Data General's evidentiary materials, tab 3 (re Intel). In addition, Data General provides no specific facts disputing plaintiffs' submissions which establish that Zilog will also make its software available separately from its CPUs. Deposition of William B. Sweet, Zilog's director of marketing, quoted at plaintiffs' supp. fact citations II-B, tab 2.

On the other hand, plaintiffs have not presented specific facts disputing Data General's argument that, among the companies that offer both software and CPUs, it is the "predominant practice" to license software only for use on the licensing company's CPUs. Declaration of Richard L. Bernacchi, ¶5. This fact alone neither calls for a finding that software and CPUs are components of a single

In sum, with respect to the subsidiary consideration of whether software and CPUs are "normally sold or used as a unit with fixed proportions," *id.* at 48, the undisputed material facts establish that they are not normally sold as a unit. They need not be manufactured by the same company and they are frequently sold separately by Data General and by other computer companies. Neither are they normally sold in fixed proportions. Although a CPU can only operate with one software program at any one time,[22] there are several different software programs that may be used with any particular CPU.[23]

With respect to the subsidiary consideration of whether the bundling of software and CPUs results in "cost savings apart from those * * * normally attendant upon any tie-in," *id.*, Data Data General claims that such cost savings are attributable to its coordinated research and development ("R&D") efforts.[24] However, the record lacks factual support for that contention. Data General establishes beyond dispute that joint R&D yields technological benefits in the initial design and gradual perfection of both CPUs and related software.[25] Yet there is no

product nor precludes a finding that they are separate products. First, "[a] favorable intra-industry comparison, although relevant, is by no means conclusive on the single product issue." *Anderson Foreign Motors, Inc. v. New England Toyota Distributors, Inc., supra* n.12. Second, in the particular circumstances of this case, the undisputed facts (including separate availability, separate pricing, and separate marketing of CPUs and software, and the existence of numerous companies that market either software or CPUs, but not both) establish that software and CPUs are separate products within the meaning of the antitrust laws.

22 Data General's factual assertion (d) in response to plaintiffs' fact statement II,B,8.

23 Deposition of George Seligman, Data General's vice president of small business systems development, quoted at Data General's evidentiary materials, tab 1.

24 Data General's factual assertions (b)(2) and (b)(5) in response to plaintiffs' fact statement I,A,1. (See also Data General's fact statements 4(b), 4(e) and 24.)

25 Seligman affidavit; declaration of George Franzen, Data General's software systems programmer.

factual showing, beyond vague and conclusory references to "cost savings" and "lower costs,"[26] of measurable economic benefits attributable to joint R&D. Moreover, there is no showing that any of the asserted benefits of joint R&D would be sacrificed if Data General were to offer its software apart from, as well as together with, its CPUs. Inasmuch as plaintiffs seek not to prevent bundling but to make unbundling an additional option, Data General cannot, as a matter of law, support its single product argument by suggesting that its costs are lower because CPUs and software are developed together than they would be if they were developed separately[27] or if Data General were forced to develop software so that it could be used with other companies' CPUs.[28] The question is not whether joint R&D is more economical than separate R&D, but whether joint R&D calls for joint marketing. The record is barren of any factual support for an affirmative answer to that question. Thus, in light of the undisputed material facts in the record, the Court is compelled to conclude that software and CPUs are separate products.

Data General attempts to circumvent that conclusion by contending that customers prefer to obtain the items from the same vendor,[29] that its software will not function reliably with foreign[30] CPUs,[31] and that it is extremely difficult to service its software when used with foreign CPUs.[32] Although these

26 De Castro affidavit ¶¶12(h) and 15(a); Seligman deposition, quoted at Data General's evidentiary materials, tab 1A. *See also supra* n.24.

27 Seligman affidavit ¶¶18-19.

28 *Id.* ¶20.

29 Data General's factual assertion (b)(6) in response to plaintiffs' fact statement I,A,1. (See also Data General's fact statement 4(f).)

30 The term "foreign" refers to a CPU manufactured by a company other than the licensor of the software with which it is used.

31 Data General's factual assertion (b)(7) in response to plaintiffs' fact statement I,A,1. (See also Data General's fact statement 4(g).)

32 Data General's factual assertion (b)(8) in response to plaintiffs' fact statement I,A,1. (See also Data General's fact statement 4(h).)

considerations are relevant to the ultimate determination of whether the alleged tie-in is unlawful, the governing case law in this circuit takes them into account as affirmative, business justification defenses rather than folding them into the separate products issue.[33] Each of Data General's contentions will be fully discussed in section IV, E, *infra.*

In order to satisfy the first element of an unlawful tie-in, plaintiffs must establish not only that Data General markets two separate products but that it requires customers to purchase both of them pursuant to a tying scheme. In this case, the crucial issue with respect to the first element is whether software and CPUs are distinct products. The existence of a tying scheme is virtually undisputed. Data General admits that it licenses its software under a Program License Agreement that restricts the use of such software to a "designated" CPU, and that, with two exceptions not relevant to this case, Data General will designate only its own CPUs for use with its software.[34]

Plaintiffs further contend that Data General reinforces and expands this basic tie-in by requiring customers to purchase a minimum amount of its memory and peripheral products in order to obtain its software. Although customers may avoid this "minimum equipment configuration" ("MEC") requirement by paying a program license charge, plaintiffs contend that the

[33] *Moore v. Jas. H. Matthews & Co., supra* n.11, 550 F.2d at 1217-18; *Siegel v. Chicken Delight, Inc., supra* n.12, 448 F.2d at 50-52. Reference to "customer need" in the separate products discussion in *ILC Peripherals Leasing Corp. v. IBM,* 448 F. Supp. 228, 232 (N.D. Cal. 1978), does not affect the analysis here. In that case, the Court found that the aggregation of computer peripheral devices constituted a single product, in part because the purpose of combining the items was to enhance their technological capabilities and satisfy a recognized customer need for increased on-line storage capacity. *Id.* This case does not involve physical aggregation and there is no evidence that bundling for marketing purposes yields any technological benefits apart from those attributable to joint R&D (which, for reasons discussed above, does not require joint marketing).

[34] Data General's response to and factual assertions re plaintiffs' fact statement II,A,3.

charge is so expensive that customers are forced to take the equipment specified in the MEC.[35] Data General admits the existence of the MEC, but denies that the alternative license charge is prohibitively expensive.[36]

Even though the compulsion aspect of the MEC is a disputed issue of material fact, the existence of the basic software-CPU tie-in by virtue of the Program License Agreement remains undisputed. Thus, the undisputed material facts establish that software and CPUs are separate products subject to a tie-in requirement, thereby satisfying the first requisite element of an unlawful tie-in.

2

The Court now turns to Ampex' additional claim that Data General maintains a tie-in between its CPUs (tying product) and its memory devices (tied product). With respect to the function of the aggregation, the starting point is that neither a CPU nor a memory board can function independently of the other.[37] Yet they are physically distinct items; each is located on a separate circuit board which is plugged into the chassis in which the computer system is housed.[38] Thus, the analysis

[35] Plaintiffs' fact statement III,A,2 and supporting citations.

[36] Data General's response to and factual assertions re plaintiffs' fact statements III,A,2 and II,D,25.

[37] Data General's factual assertion (c) in response to Ampex' fact statement IV,A,1; factual assertion (b) in response to Ampex' fact statement IV,B,3.

[38] Two of Data General's CPUs, the NOVA 4/C and the microNOVA, are located on the same circuit board as their memory devices. Ampex does not compete with Data General in these two markets and has excluded them from the scope of this litigation. Ampex' fact statement IV,A,1; Ampex' reply brief at 8, n.7. Apart from these two products, Data General offers no *facts* to dispute the evidence that CPUs and memory devices are physically distinct. Data General's factual assertions (a)(i) and (a)(ii) in response to Ampex' fact statement IV,B,2; affidavit of Gardner C. Hendrie, Data General's designer of "general purpose digital computers," ¶12 (referring only to NOVA 4/C and microNOVA). (See also Data General's fact statements 98-99, 108.)

focuses on whether both must be manufactured by the same company.

As in the case of software and CPUs, Data General's marketing practices indicate that the items are separate products. Data General will sell memory boards apart from CPUs (although, as described *infra,* it will not make initial sales of CPUs without memory boards). Data General claims that the memory boards that it sells on an unbundled basis are different from the memory boards that it sells together with its CPUs. It labels the former "add-on memory" and the latter "main memory."[39] However, the difference is in the name rather than in the functional capabilities of the memory board. Data General's manager of product marketing programs stated that the memory boards that Data General sells bundled with its CPUs are "form, fit and function identical" to the boards it sells separately as add-on memory.[40] Data General's president stated that the two are easily interchanged:

> "The addressing jumpers have to be changed * * *. It involves moving a couple of wires on the [circuit] board depending on how the particular memory is designed * * *. [It takes] ten fifteen minutes."[41]

The fact that Judge Christensen used the terms "main memory" and "auxiliary memory" in describing some of IBM's products in *Telex Corp. v. IBM,* 367 F. Supp. 258, 274 (N.D. Okl. 1973), *rev'd on other grounds,* 510 F.2d 894 (5th Cir. 1975), is not controlling here. First, Judge Christensen's appellation appeared in an altogether different context, unrelated to the single-separate products question at issue here. Second, there is no indication that Judge Christensen was not simply adopting IBM's terminology for descriptive purposes, without considering whether the items were functionally equivalent. The undisputed facts in the record in this case establish that the add-on memory that Data General sells on an unbundled basis is virtually identical to the main memory that it sells bundled with its CPUs. In short, Data General has not raised a genuine dispute with respect to the material fact that it sells the tied product separately as well as bundled with the tying product.

[39] Data General's factual assertion (c) in response to Ampex' fact statement IV,B,5; (see also Data General's fact statements 27 and 107); de Castro affidavit at 5-6, n.2.

[40] Deposition of John Scanlon, Data General's manager of product marketing programs, quoted at Ampex' fact citations IV-B, tab 3.

[41] De Castro deposition, quoted at Ampex' reply citations, tab 17.

As in the case of software and CPUs, Data General proffers undisputed facts establishing that many other companies that produce both CPUs and memory boards market their CPUs together with memory.[42] Whether Ampex is among the companies engaged in such marketing practices is the subject of dispute.[43] Although these facts may help to explain why Data General ties the sale of CPUs to the purchase of memory boards (or, perhaps, why *other* companies have followed suit), they are insufficient to support a finding that CPUs and memory are a single product. The relevant consideration to which these facts pertain is whether the items are normally sold or used as a unit. In light of the undisputed fact that Data General (and other companies such as Ampex) will sell memory boards separately, it cannot be concluded that memory boards and CPUs are normally sold as a unit. If the facts summarized above were to be presented to a jury, the Court would be compelled to direct a verdict in favor of Ampex on the separate products issue.

[42] Data General's factual assertions (b)-(d) in response to Ampex' fact statement IV,B,10 (see also Data General's fact statements, 124, 127-28); affidavit of Lewis H. Van Antwerp, director of corporate pricing, NCR Corp., ¶5; deposition of Leo J. Chamberlain, vice president and general manager, Mil Spec Computer Division, ROLM Corp., quoted at Data General's evidentiary materials, tab A-20, 1; deposition of Charles Allen Dorsett, SCI product manager, quoted at Data General's evidentiary materials, tab A-20,11.

[43] *Compare* depositions of Gordon B. Baumeister, Steve Quering, William Prosenik, and John Jory, quoted at Data General's evidentiary materials, tabs A-20,3, A-20,5, A-20,6-7, and A-20,9, respectively with Ampex' interrog. ans. (lst set) No. 97, quoted at Ampex' reply citations, tab 21.

In addition to the proof that Data General's CPUs and memory boards are often not *sold* as a unit, the record contains undisputed facts establishing that they frequently are not *used* as a unit. Evidence such as the following affidavit of Billy Ray Slater, principal engineer at Forney Engineering, goes far toward demonstrating that Data General's CPUs and memory boards are separate products:

> "Data General requires us to purchase at least 8KW of core memory with each NOVA 3 CPU we buy. Thus, in order to configure our systems properly, Forney must pull the Data General board out of the chassis, and replace it with a 16KW Ampex board (after which we add three more Ampex boards). This means that Forney must buy a number of Data General boards that it does not want and for which it has no use. These Data General memory boards are currently in inventory at Forney. At this time, we have 28 Data General 8KW memory boards in the storeroom."[44]

Data General admits that some of its customers remove the memory boards that come with its CPUs and replace them with other companies' memory boards.[45] It attempts to blunt the impact of that fact by claiming that foreign memory boards function less reliably than Data General memory boards when used with Data General CPUs and by suggesting that the three companies specifically mentioned in Ampex' evidentiary submissions are the exception to the general customer practice of using Data General's memory along with its CPUs.[46] Neither argument raises a genuine issue of material fact. With respect to the reliability argument, the record does contain a genuine dispute concerning the extent to which foreign memory boards are *fully* compatible with Data General's CPUs.[47] However, this

[44] Ampex' fact citations IV-B, tab 25.

[45] Data General's response to Ampex' fact statement IV,B,8.

[46] *Id.;* Data General's fact statement 125.

[47] *Compare* Ampex' fact statement IV,B,9 and fact citations IV-B, tabs 10, 26-36, with Data General's factual assertions in response to Ampex' fact statements IV,B,8 and IV,B,9 and citations referenced therein.

dispute is not material to the single-separate products issue because the undisputed facts establish that some companies, such as Forney Engineering, regularly use foreign memory boards with Data General CPUs. The extent to which technological modifications may be required, or servicing problems may be encountered, is not relevant to the question whether Data General's CPUs and memory boards are used as a unit. With respect to the argument that the three named customers are the exception rather than the rule, Data General's evidentiary support is too conclusory and self-serving to raise a genuine dispute.[48] Moreover, even if its evidence is accepted as fully competent and totally accurate, it is insufficient to support a finding that CPUs and memory boards are a single product. It remains undisputed that at least some customers do not view CPUs and memory boards as a single product. Other customers who use Data General's memory boards along with its CPUs *may* view the items as components of a single product; but they may also buy the items together because of Data General's conceded bundling scheme. To conclude that a tie-in is not illegal because customers acquiesce in it would be to stand antitrust law on its head.

In accord with *Siegel,* the Court has been examining the question whether Data General's CPUs and memory boards are "normally sold or used as a unit with fixed proportions." The undisputed facts in the record preclude a trier of fact from concluding that they are normally sold or normally used as a *unit.* The undisputed facts also preclude a finding that they are normally sold or used in *fixed proportions.* Data General admits that the amount of "main memory" which it has sold together with its CPUs has varied over time and that at least some of its CPUs may be used with a variety of memory boards.[49] Furthermore, the fact that Data General sells "add-

[48] Data General's factual assertion (a) in response to Ampex' fact statement IV,B,10 and affidavits and evidentiary materials referenced therein.

[49] Data General's response (a) and (b) and factual assertions (d) in response to Ampex' fact statement IV,B,4.

on memory" to enable customers to expand their memory capacity establishes that the amount of memory to be used with each Data General CPU is not fixed, but varies according to the particular model CPU and the particular user's needs.

With respect to the remaining *Siegel* consideration —whether the bundling of the two items involves cost savings—Data General argues that coordinated R&D regarding CPUs and memory boards produces lower costs.[50] Yet Data General puts forth virtually no specific support for its conclusory statements. Moreover, it presents no evidence that the alleged lower costs have been passed along to consumers.[51] Thus, the record lacks factual evidence from which a jury might conclude that the bundled sale of CPUs and memory boards involves cost savings apart from those normally attendant upon any tie-in.

Data General also advances technological reasons, some of which involve economic considerations as well, in support of its joint sale of CPUs and memory. Data General argues that the joint development and design of the two items "is essential to assure the proper functioning of the various components of a computer in unison,"[52] and that "[i]t would be cost prohibitive and ineffective to attempt to test and ship a computer or computer system without main memory."[53] Both of these arguments fail, as a matter of law, to support a single product finding in the absence of any showing (1) that the technological benefits would be lost if Data General sold its CPUs separately (as well as together with its memory boards), (2) that cost savings are passed along to consumers, or (3) that cost

[50] Data General's factual assertion (c) in response to Ampex' fact statement IV,B,9.

[51] *See* affidavits and evidentiary materials referenced in Data General's factual assertion (c) in response to Ampex' fact statement IV,B,9.

[52] Data General's factual assertion (c) in response to Ampex' fact statement IV,B,9.

[53] Data General's factual assertion (f) in response to Ampex' fact statement IV,B,9.

savings could not be reflected in price differentials between bundled and unbundled sales.

In light of the three factors relevant to the single-separate product issue, the undisputed facts compel the Court to conclude that CPUs and memory boards are separate products within the meaning of Sherman § 1 and Clayton § 3. The items are physically distinct; foreign memory boards will function in tandem with Data General's CPUs; at least some customers choose, even in the face of Data General's bundled sales, to substitute foreign memory for the Data General memory they have already purchased; and Ampex has sold approximately 5,000 memory boards specifically for use with Data General's CPUs.[54]

Data General concedes that it requires customers purchasing CPUs from its regular price list to purchase a minimum amount of memory along with the CPU.[55] However, Data General contends that that requirement is not a coercive tie-in because customers are free to purchase CPUs separately, without any memory, from its spare parts and components list.[56] The existence of this unbundled "option" does not save the memory purchase requirement from the strictures of the antitrust laws. First, Data General makes no showing in support of its bald claim that a customer initially seeking to acquire its CPU may take advantage of the spare parts list. The only two customers whom Data General identifies as having purchased CPUs separately from its spare parts list[57] were buying replacement CPUs and testified that they had been forced into buying undesired memory along with their original

[54] Declaration of Alvin Horowitz, Ampex manager of product marketing, quoted at Ampex' fact citations IV-E, tab 31.

[55] Data General's factual assertion (c) in response to Ampex' fact statement IV,A,1. (See also Data General's fact statement 95.)

[56] Data General's factual assertion (d) in response to Ampex' fact statement IV,A,1. (See also Data General's fact statements 96, 102.)

[57] Data General's factual assertion (e) in response to Ampex' fact statement IV,A,1, and affidavits referenced therein. (See also Data General's fact statements 97, 156.)

CPUs.[58] Second, and consistent with Data General's inability to produce evidence of unbundled initial purchases, undisputed facts establish that the spare parts list option is more theoretical than real. Data General has only published two such lists, one in 1969 and one in 1974.[59] One of its CPU models, the NOVA 3, has never been included and its NOVA 1200 line was not included for four years.[60] With respect to the NOVA CPUs that are listed, Data General neither advertises nor advises customers of the existence of the option of initially purchasing a CPU without memory from the spare parts list.[61] Third, Data General's pricing structure chills any potential use of the spare parts list for initial CPU purchases. It is less expensive to buy a CPU (and related parts such as frames and console) bundled with memory, using the regular price list, than to buy a CPU and related parts without *any* memory from the spare parts list.[62] It is hornbook law that differential pricing that makes an unbundled option uneconomical will not save the bundled "alternative" from antitrust liability. *United States v. Loew's, Inc.*, 371 U.S. 38, 43, 83 S. Ct. 97, 101, 9 L.Ed.2d 11 (1962); *American Manufacturers Mutual Insurance Co. v. American Broadcasting-Paramount Theatres, Inc.*, 388 F.2d 272, 283 (2d Cir. 1967).

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[58] Declaration of Erik Nakonechnyj, quoted at Ampex' fact citations IV-E, tab 2 (re Action Communications Systems, Inc.); declaration of Alvin V. Flory, Amdahl's director of material, quoted at Ampex' reply citations, tab 14 (re Amdahl Corp.). The supplemental affidavit of John Park, Data General's director of support services, offers no indication that the "hundreds" of sales from the spare parts list involved initial CPU purchases rather than replacement purchases.

[59] Ampex' reply citations, tab 5.

[60] Data General's supp. interrog. ans. (lst set), Nos. 5 and 23, quoted at plaintiffs' fact citations I-A, tab 7.

[61] De Castro deposition, quoted at Ampex' reply citations, tab 4; Ampex' fact citations IV-A, tabs 2-7, 11-15, 17-18 (testimony of Data General employees and third-party witnesses establishing Data General's practice of failing to advise customers of potential availability of purchasing CPU without memory from spare parts list).

[62] Ampex' reply citations, tab 6; Ampex' reply support, tabs 6-8, 10.

Thus, Data General's requirement that any customer initially purchasing a CPU must also purchase a minimum amount of memory is a tie-in of two separate products within the meaning of the antitrust laws. The two computer cases on which Data General principally relies in its single product argument are of no avail here. In both *Telex Corp. v. IBM, supra,* and *ILC Peripherals Leasing Corp. v. IBM,* 448 F. Supp. 228 (N.D. Cal. 1978), the courts were analyzing products and alleged tying restrictions that were different from those at issue here. The *Telex* court found that IBM's integration of memory control functions with data processing functions was not an illegal tie-in because "the integrated control * * * is wholly optional. IBM continues to offer central processing units without integrated controllers." *Telex Corp. v. IBM, supra,* 367 F. Supp. at 347. In contrast, the record in this case establishes beyond dispute that a customer initially desiring to purchase a Data General CPU has no practical option but to purchase Data General's memory board to go along with it. The *ILC Peripherals* court found that IBM's integration of a head/disc assembly into its Madrid disk drive produced technological and economic benefits that were not available with unbundled equipment and reflected widespread industry practice; all relevant considerations called for the items to be deemed a single product. *ILC Peripherals Leasing Corp. v. IBM,* 448 F. Supp. at 232-33. In contrast, the record in this case establishes beyond dispute that all relevant considerations support a finding that Data General's CPUs and memory boards are separate products.

B

The second element that must be established in order to make out a *per se* tying violation is that "the seller has the power, within the market for the tying product, to raise prices or to require purchasers to accept burdensome terms that could not be exacted in a completely competitive market." *Fortner II, supra,* 429 U.S. at 620, 97 S. Ct. at 867. In two leading tie-in

decisions rendered during the past decade, *Fortner I, supra,* and *Fortner II, supra,* the Supreme Court refined and synthesized the governing considerations to be taken into account in determining whether a seller possesses the requisite economic power.

Three alternative indicia of economic power have been recognized. First, it may be shown that the seller occupies a dominant position in the tying product market. This is the most difficult index to prove and, although such proof would be sufficient to establish economic power, it is not necessary. *Fortner II, supra,* 429 U.S. at 620, 97 S. Ct. at 867; *Fortner I, supra,* 394 U.S. at 502-03, 89 S. Ct. at 1258; *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1215. Second, it may be shown that the seller's product is sufficiently unique that he has "some advantage not shared by his competitors in the market for the tying product." *Fortner II, supra,* 429 U.S. at 620, 97 S. Ct. at 868. *See also Fortner I, supra,* 394 U.S. at 502-03, 89 S. Ct. at 1258; *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1215. The Supreme Court has described such uniqueness in terms of a tying product's *legal, physical* or *economic* characteristics that confer special advantages upon the seller:

> "Uniqueness confers economic power only when other competitors are in some way prevented from offering the distinctive product themselves. Such barriers may be legal, as in the case of patented and copyrighted products, *e.g., International Salt; Loew's,* or physical, as when the product is land, *e.g., Northern Pacific.* It is true that the barriers may also be economic, as when competitors are simply unable to produce the distinctive product profitably, but the uniqueness test in such situations is somewhat confusing since the real source of economic power is not the product itself but rather the seller's cost advantage in producing it." *Fortner II, supra,* 429 U.S. at 621, 97 S. Ct. at 868, quoting *Fortner I, supra,* 394 U.S. at 505 n.2, 89 S. Ct. at 1259 n.2.

Third, economic power may be shown where a substantial number of customers have accepted the tie-in *and* there are no explanations other than the seller's economic power for their willingness to do so. *Fortner II, supra,* 429 U.S. at 618 n.10, 97 S. Ct. at 866 n.10; *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1216.

1

With respect to the software-CPU tie-in, the economic power inquiry focuses on whether Data General's software is unique under the standards articulated in *Fortner I* and *Fortner II.* The crux of Data General's cross-motion for summary judgment is its argument that the facts in the record cannot, as a matter of law, satisfy the economic power test.

Plaintiffs first claim that the copyright notices that Data General concededly attaches to its software[63] create legal barriers from which economic power may be presumed. It is well established that economic power may be presumed where a tying product is patented or copyrighted. *United States v. Loew's, Inc., supra,* 371 U.S. at 45, 83 S. Ct. at 102; *United States v. Paramount Pictures, Inc.* , 334 U.S. 131, 157-58, 68 S. Ct. 915, 929, 92 L.Ed. 1260 (1948); *International Salt Co. v. United States,* 332 U.S. 392, 395-96, 68 S. Ct. 12, 14-15, 92 L.Ed. 20 (1947). In the above-quoted passage contained in both *Fortner I* and *Fortner II,* the Supreme Court reaffirmed the concept that barriers erected by patent and copyright law may confer the requisite economic power. However, the Court's emphasis in *Fortner II* upon the factual showing necessary to prove economic power serves to highlight some significant subtleties in the long-standing rule.

Notwithstanding implied suggestions to the contrary, the sole fact of the existence of a copyright notice has not been held to be sufficient to prove economic power. In *United States v.*

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[63] Data General's response to plaintiffs' fact statement II,C,(1),10.

Loew's, Inc., supra, the case on which plaintiffs principally rely, the tying items (copyrighted, popular movies) were found to be qualitatively superior to the tied items (copyrighted, little-known movies). *Id.,* 371 U.S. at 48-49, 83 S. Ct. at 103-104. The Second Circuit has explained that a presumption of economic power arose in *Loew's* not merely from the existence of the copyright on the tying products but from "the attractiveness of some of the films, as contrasted to the inferior quality of the others also required to be purchased in the package." *Capital Temporaries, Inc. of Hartford v. Olsten Corp., supra,* 506 F.2d at 663. The Ninth Circuit has also indicated that the existence of a patent (or, presumably, a copyright) does not *ipso facto* establish the requisite economic power. In *Rex Chainbelt Inc. v. Harco Products, Inc.,* 512 F.2d 993 (9th Cir. 1975), *cert. denied,* 423 U.S. 831, 96 S. Ct. 52, 46 L.Ed.2d 49 (1975), the court stated that a patentee who makes his patented product available only in conjunction with an unpatented product "runs the risk that the court may, in conjunction with the particular evidence in the case," find an illegal tying arrangement. *Id.* at 1002. The court's analysis began but did not end with the fact that the tying product was patented; the court then reviewed other facts in the record before determining that the requisite economic power had been shown. *Id.* at 1003. Thus, the presumption of economic power attendant upon patent or copyright protection of the tying product is not conclusive. The trier must also take note of material facts in the record which may rebut that presumption.

In this case, the question whether Data General possesses economic power in the software market by virtue of its copyrights cannot be resolved short of trial. The plaintiffs have not, at this juncture, brought themselves within the factual framework of *Loew's.* Although they have presented facts suggesting that Data General's software is as desirable to computer customers as "Gone With The Wind" was to television stations,[64] they have not shown that the CPUs Data General ties to

[64] Plaintiffs' fact citations II-C(2)(b), tabs 31, 40-42, 44-47.

its software are as undesirable as "Getting Gertie's Garter."[65] In addition, Data General has presented conflicting factual material suggesting that its software is not particularly desirable.[66]

Moreover, Data General makes a strong case in support of its claim that a presumption of economic power is not appropriate in the context of computer software. Affidavits submitted by Data General's experts and third parties state that copyright notices attached to computer software do not prevent others from developing functionally equivalent programs.[67] Such statements are consistent with a recent district court decision that copyright notices on computer software protect the underlying "source program" but do not prevent others from copying the material embodiment of that program, known as the "object program." *Data Cash Systems, Inc. v. JS&A Group, Inc.,* 480 F. Supp. 1063, 203 U.S.P.Q. 735 (N.D. Ill. 1979)(BNA); *cf. Synercom Technology, Inc. v. University Computing Co.,* 462 F. Supp. 1003, 1013 (N.D. Tex. 1978).

Whether Data General possesses such economic power with respect to its copyrighted software is a mixed question of law and fact. The factual record is presently too inconclusive to permit summary adjudication in favor of either plaintiffs or defendant. The parties must proceed to trial for a determination of whether the copyright notices attached to Data General's

[65] *United States v. Loew's, Inc.*, 371 U.S. 38, 48 n.6, 83 S. Ct. 97, 103 n.6, 9 L.Ed.2d 11 (1962). The Court refers to the films mentioned in *Loew's* for illustrative purposes, not to suggest that the requisite disparity between the desirability of the tying product and the undesirability of the tied product must be equivalent to the disparity found in *Loew's*.

[66] Data General's response (d) and (e) to plaintiffs' statement II,C(2)(b)17-20 and affidavits and evidentiary materials cited therein.

[67] Affidavit of Ernest E. Keet, president of Turnkey Systems, Inc., and affidavit of Arthur J. Levine, attorney specializing in copyright law. See also Data General's response to plaintiffs' fact statements II,C(1)10 and II,D,21 and factual assertions (a)-(c), (f)-(g) accompanying response to statement II,D,21.

software bestow upon it "some advantage not shared by his competitors" in the software market. *Fortner II, supra,* 429 U.S. at 620, 97 S. Ct. at 868.

Plaintiffs advance another ground in support of their argument that legal barriers render Data General's software unique. They rely on the undisputed fact that Data General claims that its software is proprietary and protected by the law of trade secrets.[68] As with respect to copyright protection, the parties dispute whether trade secrets protection has in fact conferred economic power upon Data General.[69] Unlike the copyright issue, it has never been held that trade secrets protection is sufficient to create a presumption of economic power. In light of both *Fortner II* and the inconclusive state of the record in this area, the Court at this time declines the plaintiffs' invitation to extend the *Loew's* rule to encompass the law of trade secrets. Whether Data General has in fact attained economic power attributable to the trade secrets protection of its software is a question for the jury.

In addition to alleged legal barriers, plaintiffs claim that Data General's software is protected by economic barriers rendering it sufficiently unique to satisfy the economic power requirement.

In order to adapt Data General's operating systems software to their particular needs, customers must design applications software. It is undisputed that Data General's customers have spent many millions of dollars developing such applications software.[70] Plaintiffs contend that these customers cannot use their Data General-dependent applications software

[68] Data General's factual assertions (a) and (b) in response to plaintiffs' fact statement II,C(1)11.

[69] *Compare* plaintiffs' replies to Data General's fact statements 29-32, 33-38, 42-43, 44, and 50-51 with Data General's factual assertions (c)-(d) and (f) in response to plaintiffs' fact statement II,C(1)11 and affidavits, declarations, and evidentiary materials cited therein.

[70] Data General's response to plaintiffs' fact statement II,C(2)(a)12.

with any other company's operating systems software without incurring high conversion costs.[71] This "lock-in" is said to constitute an economic barrier giving Data General economic power in the market for operating systems software. However, Data General submits conflicting evidentiary materials indicating that plaintiffs or other companies could economically develop operating systems software that would be compatible with applications software initially designed for use with Data General's operating systems software.[72] This raises precisely the type of factual issue which *Fortner I* and *Fortner II* suggest is more appropriately resolved after a thorough probe of the material facts at trial, rather than by way of summary judgment. Moreover, the *Fortner* decisions require plaintiffs to establish not only that Data General enjoys the economic advantage of having customers locked into its software, but also that its competitors are somehow prevented from enjoying similar advantages. *Fortner II, supra,* 429 U.S. at 621, 97 S. Ct. at 868; *Fortner I, supra,* 394 U.S. at 505 n.2, 89 S. Ct. at 1259 n.2.

Plaintiffs contend that Data General's software is protected by a second type of economic barrier giving rise to the requisite uniqueness. This contention is that Data General's software is so much more comprehensive and field proven than other software that customers are deterred from shifting to other companies' products.[73] Plaintiffs present some evidence suggesting that Data General's software is uniquely desirable to some customers, at least in comparison with other software currently available.[74] Yet Data General offers evidence sufficient to dispute plaintiffs' contentions, indicating instead that some plaintiffs' software and third parties' software is at

[71] Plaintiffs' fact statements II,C(2)(a)13-16 and fact citations II-C, tabs 12-21, 23, 25, 28-29.

[72] Data General's response to plaintiffs' fact statements II,C(2)(a)13-16 and evidentiary materials cited therein, particularly tabs 44-49.

[73] Plaintiffs' fact statements II,C(2)(b)17-20.

[74] *See supra* n.64.

least as desirable as Data General's.[75] This conflicting evidence creates a genuine dispute with respect to facts deemed material under the *Fortner* decisions.

Plaintiffs argue that even if the alleged legal and economic barriers are insufficient individually to establish Data General's economic power in the software market, the combination of the barriers is sufficient. The legal principle underlying that argument is consistent with the repeated emphasis in tie-in cases upon the particular facts in the record. *See, e.g., Fortner II, supra; Fortner I, supra; United States v. Loew's, Inc., supra.* Whether the application of the principle to this case establishes the requisite economic power will turn upon the resolution at trial of the material facts presently in dispute.

2

With respect to the CPU-memory tie-in, Ampex phrases its economic power argument in terms of the alleged legal and economic uniqueness of Data General's CPUs. However, some of its contentions pertain not to uniqueness, the second of three alternative indicia of economic power, but to the third—the acceptance of the tie-in by an appreciable number of customers. The Court will discuss the two issues separately.

(a)

Data General admits that it claims copyright, trademark, and trade secrets protection for its CPUs.[76] The parties dispute the factual and legal significance of that protection. Ampex claims that the copyright notices and trademarks create a

[75] Data General's factual assertions (a)-(c) and (e) in response to plaintiffs' fact statements II,C(2)(b)17-20 and affidavits, declarations, and evidentiary materials cited therein, particularly evidentiary materials, tabs 77-79, 81, 150 and 152.

[76] Data General's response to Ampex' fact statements IV,C, 13-14.

presumption of economic power.[77] Data General submits an affidavit stating that copyrights and trademarks attached to CPUs do not prevent others from creating functionally equivalent products.[78] Plaintiffs proffer conflicting statements made directly by Data General.[79] The Court finds that a genuine dispute exists and that the jury must determine whether Data General's copyrights and trademarks vest it with economic power in the CPU market.

The law does not presume that trade secrets protection confers economic power. Nonetheless, Ampex makes an impressive factual showing that Data General actually possesses economic power by virtue of its trade secrets. For example, Ampex submits the deposition statement of Data General's president expressing doubt that anyone could design a Data General-compatible CPU without infringing its claimed trade secrets.[80] In light of the several material facts which remain subject to genuine dispute, and mindful of the Supreme Court's emphasis upon particularized proof of actual economic power, the Court finds that the record with respect to this issue is not sufficiently conclusive to support summary adjudication. The jury will determine whether Data General's claims of trade secrets protection confer upon it economic power in the CPU market.

Ampex also claims that economic barriers render Data General's CPUs unique for purposes of establishing economic power. First, Ampex argues that a Data General CPU is the

[77] As noted in section IV,B,1, *supra*, the law clearly permits (but does not require) a presumption of economic power based on the existence of copyright protection. The Ninth Circuit has also permitted a presumption to be based on trademark protection. *Siegel v. Chicken Delight, Inc., supra* n.12, 448 F.2d at 50. *But cf. Capital Temporaries, Inc. of Hartford v. Olsten Corp.*, 506 F.2d 658, 663-65 (2d Cir. 1974); *Cash v. Arctic Circle, Inc.*, 85 F.R.D. 618, 1980-1 Trade Cas. ¶63,095 (E.D. Wash. 1979) (CCH).

[78] Levine affidavit, ¶¶23-24.

[79] Data General's pleadings filed in this litigation, quoted at Ampex' fact citations IV-C, tabs 12-14.

[80] De Castro deposition, quoted at Ampex' reply citations, tab 24.

only kind that Data General permits to be used in conjunction with its software.[81] As noted in Section IV, A, 1, *supra*, Data General concedes as much.[82] However, the record concerning this issue lacks undisputed facts sufficient to establish the requisite economic power. Ampex apparently seeks to prove a derivative form of uniqueness based on the following assumptions: (1) Data General's software is uniquely desirable insofar as competitors cannot economically offer similar software; (2) in order to use such software, customers must use Data General's CPUs; and (3) Data General's CPUs derive their uniqueness from the requirement that they, and only they, may be used with Data General's unique software. This argument is sound if and only if the uniqueness of Data General's software is established, a matter that cannot be resolved on these cross-motions for summary judgment. In short, the question whether Data General's CPUs are derivatively unique will be answered by the jury.

Ampex' second argument with respect to economic barriers is that Data General's CPUs possess unique capabilities. They present some supporting statements by third-party customers,[83] but much of their factual support is self-serving "puff" by Data General employees highlighting the positive features of their products.[84] Data General admits that there are differences between its CPUs and others on the market, but correctly states that Ampex' evidence does not, on the present record, prove that Data General enjoys cost advantages not shared by its competitors.[85] In addition, Data General points out that plaintiffs claim to manufacture CPUs that are functionally equivalent

[81] Ampex' fact statement IV,C,11(b).

[82] Data General's factual assertion in response to plaintiffs' fact statement II,A,3.

[83] Deposition of Bruce DaCosta, University of Arizona, quoted at Ampex' fact citations IV-C, tab 5; deposition of David Clinton, president of Custom Systems, Inc., quoted at *id.*, tab 6.

[84] Ampex' fact citations IV-C, tabs 7-11.

[85] Data General's comments on Ampex' evidence re fact statement IV,C,12.

to Data General's.[86] The record contains disputed issues of material fact with respect to the alleged uniqueness of Data General's CPUs. The jury must be called upon to determine whether the NOVA CPUs are unique within the meaning of the *Fortner* decisions.

(b)

Apart from the uniqueness test, economic power may be demonstrated by the acceptance of a tie-in by a significant number of customers. However, this is limited to situations where there are no other explanations for the willingness of buyers to accept the tie-in. *Fortner II, supra*, 429 U.S. at 618 n.10, 97 S. Ct. at 866 n.10.

Ampex claims that "an appreciable number of purchasers of NOVA CPUs buy defendant's memory boards even though those purchasers do not want, and in some cases do not use, defendant's memory boards."[87] Ampex identifies eight companies that bought unwanted Data General memory boards in order to obtain NOVA CPUs.[88] This evidence may help to support a finding of economic power, but it alone is not sufficient. The disputed factual issues concerning whether an "appreciable number" of customers have accepted the tie-in,[89] and whether there are other explanations for their behavior,[90] must be resolved by the jury before Ampex' claim of economic power is to be proven or disproven.

[86] Data General's factual assertion (c) in response to Ampex' fact statement IV,C,11; Data General's factual assertion (d) in response to Ampex' fact statement IV,C,12; (see also Data General's fact statement 131); plaintiffs' fact statements I,B,8(a)-(c).

[87] Ampex' fact statement IV,C,11(a).

[88] Ampex' fact citations IV-A, tab 17 (SEDCO, Inc.); fact citations IV-C, tab 1 (Forney Engineering); tab 2 (Amdahl Corp.); tab 3 (Source One, Inc.); fact citations IV-E, tab 1 (Bell & Howell Co.); tab 3 (Custom Systems, Inc.); tab 32 (Computervision Corp.); reply citations, tab 3 (American Totalisator Systems, Inc.).

[89] *See* affidavits cited in Data General's comments on Ampex' IV,C,11 evidence, which affidavits raise a genuine dispute concerning whether an "appreciable number" of buyers have unwillingly accepted the tie-in.

[90] *Ibid.*

C

In a case as complex and vigorously litigated as is this, the Court is relieved to find at least one issue that may be resolved with relative ease. The third requisite element of a *per se* tying violation is that "a 'not insubstantial' amount of interstate commerce is affected." *Fortner I, supra,* 394 U.S. at 499, 89 S. Ct. at 1256, quoting *Northern Pacific Ry. Co. v. United States, supra,* 356 U.S. at 5-6, 78 S. Ct. at 518. "For purposes of determining whether the amount of commerce foreclosed is too insubstantial to warrant prohibition of the practice, * * * the relevant figure is the total volume of sales tied by the sales policy under challenge, not the portion of this total accounted for by the particular plaintiff who brings suit." *Fortner I, supra,* 394 U.S. at 502, 89 S. Ct. at 1258.

1

With respect to the software-CPU tie-in, the question is whether Data General's dollar volume of business in tied CPUs is more than *de minimis. Id.* at 501, 89 S. Ct. at 1257. Data General does not dispute plaintiffs' evidence that it sold and shipped approximately 52,700 CPUs between 1970 and 1978, including shipments in 1977 alone that were valued at $254 million.[91] In addition, Data General admits that the number of its CPUs that are currently installed throughout the United States and abroad is "substantial." [92] Data General attempts to create a dispute by claiming that its competitors were not foreclosed by its tie-in from selling their own CPUs.[93] This dispute is not material to the effect on commerce issue because it is premised on a misconstruction of the governing standard. In *Fortner I* and the earlier cases relied on therein, the Supreme Court looked solely at the total volume of the defendant's tied sales. *See, e.g., Fortner I, supra,* 394 U.S. at 502, 89 S. Ct. at 1258. Proof of actual foreclosure has never been required in order to satisfy the effect on commerce test. Although plaintiffs must prove that *they* were in fact foreclosed from selling CPUs in order to satisfy the separate fact of damage test, they need not prove fact of damage to *all* of Data General's competitors in order to prove that a not insubstantial amount of commerce in the CPU market has been affected by the challenged tie-in. Plaintiffs have shown as much as they need show in order to satisfy the commerce test; the Court finds that a not insubstantial amount of commerce in the CPU market has been affected by Data General's software-CPU tie-in.

[91] Data General's answer to Fairchild's complaint, quoted at plaintiffs' fact citations II-E, tab 1; Data General's response to plaintiffs' fact statement II,E.

[92] Data General's comment in response to plaintiffs' fact statement I,A,3(g).

[93] Data General's factual assertion in response to plaintiffs' fact statement II,E.

2

With respect to the CPU-memory tie, Ampex has shown that a not insubstantial amount of commerce in memory boards has been affected. First, Data General admits that it has sold a substantial number of CPUs,[94] generating a substantial dollar volume of business. Second, it admits that all CPUs sold from its regular price list are packaged together with at least one memory board.[95] On the basis of these undisputed facts, the Court finds that a not insubstantial amount of commerce in the memory board market has been affected by the CPU-memory tie-in.

D

Even if plaintiffs establish all three elements of a *per se* tying violation, they cannot recover damages without also proving actual injury to their businesses or property. 15 U.S.C. § 15; *Gray v. Shell Oil Co., supra,* 469 F.2d at 749; *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 52. Proof of injury is a two-fold process. Plaintiffs must first demonstrate the fact of injury, proof of which is closely related to proof of defendant's liability for violating the antitrust statutes. *Knutson v. Daily*

[94] *Supra* n.92.

[95] *Supra* n.55.

Review, Inc., supra, 548 F.2d at 811. If the fact of injury is established, then plaintiffs must submit proof concerning the amount of damage incurred. Only the fact of injury is at issue for purposes of the pending cross-motions for summary judgment.

Fact of injury encompasses two aspects. Plaintiffs must show that they have actually been injured and that their injury was of an antitrust nature, causally related to defendant's antitrust violation. With respect to the former, plaintiffs face a low threshold of proof. "[The] burden of proving the fact of damage under § 4 of the Clayton Act is satisfied by * * * proof of *some* damage flowing from the unlawful conspiracy; inquiry beyond this minimum point goes only to the amount and not the fact of damage." *Zenith Radio Corp. v. Hazeltine Research Corp.,* 395 U.S. 100, 114 n.9, 89 S. Ct. 1562, 1571 n.9, 23 L.Ed.2d 129 (1969). The Court is to apply a relaxed standard in determining whether plaintiffs have surmounted this low threshold. *Knutson v. Daily Review, Inc., supra,* 548 F.2d at 811. With respect to the latter aspect of causation, plaintiffs must prove that the injury they incurred is "of the type the antitrust laws were intended to prevent and that flows from that which makes defendants' acts unlawful." *Brunswick Corp. v. Pueblo Bowl-0-Mat, Inc.,* 429 U.S. 477, 489, 97 S. Ct. 690, 697, 50 L.Ed.2d 701 (1977). *See also Handgards, Inc. v. Ethicon, Inc.,* 601 F.2d 986, 997 (9th Cir. 1979). Here, too, a relaxed standard governs. "It is enough that the illegality is shown to be a material cause of the injury; a plaintiff need not exhaust all possible alternative sources of injury." *Zenith Radio Corp. v. Hazeltine Research Corp., supra,* 395 U.S. at 114 n.9, 89 S. Ct. at 1571 n.9. *See also Knutson v. Daily Review, Inc., supra,* 548 F.2d at 811. If it appears to a "reasonable probability" that defendant's illegality was a material cause of plaintiffs' injury, the causation test is satisfied. *Flintkote Co. v. Lysfjord,* 246 F.2d 368, 392 (9th Cir. 1957), *cert. denied,* 355 U.S. 835, 78 S. Ct. 54, 2 L.Ed.2d 46 (1957). The defendant must establish that plaintiff's injury was caused by factors other than his antitrust violation in order to defeat plaintiff's showing. *Knutson v. Daily Review, Inc., supra,* 548 F.2d at 811.

1

The record contains undisputed facts indicating that customers who use Data General's software have been deterred from purchasing plaintiffs' CPUs for use with that software.[96] Data General's challenge to plaintiffs' evidence focuses not upon the conceded fact of lost sales (which relates to the actual injury aspect of the damage issue), but upon the reasons therefor (which relate to the causation aspect). Thus, the first aspect of the damage element is readily satisfied.[97]

Plaintiffs' evidence of injury also establishes the requisite causation, *i.e.,* that the foregone sales were attributable to the fact that customers using Data General's software felt bound by the tie-in to use Data General's rather than plaintiffs' CPUs.[98]

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[96] Plaintiffs' fact citations IV-E, tab 21 (re Ampex); II-D, tab 3 (re Bytronix); II-D, tab 6 (re Digidyne); II-D, tabs 1, 4 (re Fairchild); plaintiffs' supp. fact citations II-D, tabs 1, 5-6 (re SCI). One plaintiff, Data Compass, does not move for summary judgment on the fact of damage issue. Data Compass' reply brief in support of motion for summary judgment at 2. Consequently, that issue is reserved for trial (or subsequent motion by either party).

[97] Plaintiffs allege four types of injury in addition to the lost sales. They claim that Data General's copyright and trade secrets claims prevented the development of competing software to which customers could easily convert (fact statement II,D,21), that plaintiffs incurred additional expenditures to develop software for use with their own CPUs and that they would not have developed such software in the absence of the tie-in (fact statement II,D,23), that they incurred legal expenses defending Data General's lawsuits enforcing the illegal tie-in (fact statement II,D,24), and that they paid higher prices for unwanted tied items purchased from Data General than they would have paid in the absence of the tie-in (fact statement II,D,25). Disputed issues of fact exist with respect to each of these claims. *See* Data General's responses to each of the cited fact statements. However, the undisputed fact of lost sales is sufficient to support a finding of fact of damage under *Zenith Radio Corp. v. Hazeltine Research Corp.,* 395 U.S. 100, 114 n.9, 89 S. Ct. 1562, 1571 n.9, 23 L.Ed.2d 129 (1969), and *Knutson v. Daily Review, Inc.* , 548 F.2d 795, 811 (9th Cir. 1976), *cert. denied,* 433 U.S. 910, 97 S. Ct. 2977, 53 L.Ed.2d 1094 (1977).

[98] *See* plaintiffs' fact citations listed in *supra* n.96.

Data General claims that customers chose not to purchase plaintiffs' CPUs for reasons unrelated to the tie-in.[99] For example, Data General's submissions suggest that some plaintiffs do not provide adequate field service for their CPUs,[100] some of plaintiffs' marketing and pricing policies deter some customers,[101] some customers wonder whether plaintiffs may be forced out of business if Data General prevails in the trade secrets phase of this litigation,[102] and customers could obtain non-Data General software for use with plaintiffs' CPUs.[103] This evidence may go far toward minimizing the amount of damages plaintiffs ultimately recover, but it is insufficient to create a genuine dispute with respect to the fact of plaintiffs' damage. The causation test has been met by plaintiffs' proof that Data General's tie-in was a material cause of their injury. Plaintiffs need not prove that it was the sole, or principal, cause. ***Zenith Radio Corp. v. Hazeltine Research Corp., supra,*** 395 U.S. at 114 n.9, 89 S. Ct. at 1571 n.9; ***Knutson v. Daily Review, Inc., supra,*** 548 F.2d at 811. Data General can only blunt the legal effect of plaintiffs' proof by affirmatively establishing that other factors actually caused plaintiffs' injury. Data General's evidence, viewed in the most favorable light, shows that factors other than the tie-in *may* have *contributed* to plaintiffs' injury. It neither negates nor raises a genuine dispute regarding the undisputed fact that the tie-in was a material cause of plaintiffs' injury. Finally, it is clear that the causation problem in ***Brunswick*** is absent here because plaintiffs' injury flows directly from the restrictive nature of Data General's tie-in and is precisely the type of injury at which the antitrust laws are aimed.

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[99] Data General's factual assertion (e) in response to plaintiffs' fact statement II,D,22.

[100] Data General's evidentiary materials, tabs 12 and 104.

[101] *Id.*, tabs 12, 107-110.

[102] *Id.*, tab 106.

[103] *Id.*, tab 100.

2

With respect to the CPU-memory tie-in, Ampex submits a solid record of undisputed facts in support of its fact of damage argument. That argument is that customers who purchased Data General's CPUs were compelled to buy Data General's tied memory boards for use therewith, although they would have preferred to buy Ampex' memory boards.[104]

Ampex' evidence of injury and causation comes from statements by the customers[105] and by an Ampex salesman concerning foregone sales opportunities.[106] Data General admits that Ampex incurred some damage: "Data General concedes that two or three customers of Ampex may have stated that they would have preferred Ampex memories but purchased Data General computers with main memory for various reasons."[107]

Again Data General focuses on the causation aspect. First, Data General claims that Ampex' memory boards are not compatible with Data General's CPUs.[108] In light of the undisputed fact that some customers would have purchased Ampex' memory boards for use with Data General's CPUs, evidence suggesting that the customers might have encountered servicing problems if they had used Ampex' memory boards cannot negate Ampex' showing that the tie-in was *a* material cause of its lost sales. A most generous reading of Data General's evidence fails to raise a genuine dispute with respect to the fact of Ampex' damage. The amount of Ampex' damage is for the jury to determine.

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[104] Ampex' fact statement IV,E,17(f).

[105] Ampex' fact citations IV-E, tab 1 (re Bell & Howell Co.); tab 2 (re Action Communications Systems, Inc.); tab 3 (re Custom Systems, Inc.); tab 32 (re Computervision Corp.).

[106] Baumeister deposition, quoted at Ampex' fact citations IV-E, tabs 8-9.

[107] Data General's response to Ampex' reply affidavits, etc. at 27.

[108] Data General's factual assertions (a)-(b) in response to Ampex' fact statement IV,E,17.

Second, Data General claims that it does not require customers to purchase memory along with its CPUs and any customer could have purchased a Data General CPU and an Ampex memory board if desired.[109] This defense fails because undisputed facts in the record establish that (1) Data General does impose a tie-in requirement upon initial purchases of its CPUs,[110] and (2) even though some of the customers on whose testimony Ampex relies have purchased unbundled CPUs from Data General's spare parts list, those customers' initial purchases of Data General's CPUs were from the regular price list and subject to the minimum memory purchase requirement.[111]

E

As noted in section II, A, *supra*, the *per se* rule against tying arrangements admits of circumscribed exceptions. Some courts have held that legitimate business justifications permit the maintenance of a tie-in scheme which otherwise possesses the requisite elements of *per se* illegality. In recognition of the fact that any tie-in presumably promotes the business interest of the party imposing the restraint, the justifications deemed "legitimate" are few and narrowly construed. *See, e.g., Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1217-18; *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 50-52; von Kalinowski, 9 Antitrust Law and Trade Regulation § 64.05[1] (1979). Even with respect to the few exceptions that have been accepted, an asserted justification will prevail only "in the absence of less restrictive alternatives." *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 51. *See also Standard Oil Co. v. United States,* 337 U.S. 293, 306, 69 S. Ct. 1051, 1058, 93 L.Ed. 1371 (1949); *IBM v. United States,* 298 U.S. 131, 139-40, 56 S. Ct. 701, 705, 80 L.Ed. 1085 (1936).

[109] Data General's response (f) and factual assertions (c)-(d) in response to Ampex' fact statement IV,E,17.

[110] *See* section IV,B,2, *supra.*

[111] *See supra* nn.57-58.

1

Data General asserts three business justifications in support of its software-CPU tie-in. The first is that it is necessary to restrict Data General's software to use with its CPUs in order to protect its good will and minimize service problems. A good-will defense is the one most frequently raised in tie-in cases, as the Supreme Court noted when it set out the governing standards for evaluating such defenses:

> "[The good will justification] fails in the usual situation because specification of the type and quality of the product to be used in connection with the tying device is protection enough. If the manufacturer's brand of the tied product is in fact superior to that of competitors, the buyer will presumably choose it anyway. *The only situation, indeed, in which the protection of good will may necessitate the use of tying clauses is where specifications for a substitute would be so detailed that they could not practically be supplied.*" *Standard Oil Co. v. United States, supra,* 337 U.S. at 306, 69 S. Ct. at 1058 (emphasis added).

The Ninth Circuit quoted and applied this standard in the course of rejecting an alleged good-will defense in *Moore v. Jas. H. Matthews & Co., supra,* 550 F.2d at 1217. The Ninth Circuit has also suggested in *dicta* that a good-will justification might be accepted where specifications could not be supplied because to do so would divulge trade secrets. *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 51.

Data General's good-will defense rests upon two assumptions. First, Data General states that its software and CPUs are designed to function together, it does not know whether foreign CPUs are "totally compatible" with its software, and its software cannot be expected to function as effectively and reliably with foreign CPUs as with Data General's CPUs.[112]

[112] Brief of Data General in opposition to plaintiffs' motion for partial summary judgment at 54 ("Data General's opposition brief"); *see, generally,* Data General's response to plaintiffs' fact statements I,A,1 and III,C, 14-16.

Second, it states that it would be prohibitively expensive to provide field service for its software when used with foreign CPUs.[113] The combined result of these factors is that Data General's software would malfunction more frequently and Data General would be less able to service it if it were used with foreign CPUs. Customers would be dissatisfied and Data General's reputation would be tarnished.

Even if the jury were to accept as true each of Data General's evidentiary submissions in support of these assumptions, it would not be permitted to find that the software-CPU tie-in is a justifiable restraint because the record establishes beyond dispute that less restrictive alternatives are available. One potential alternative—providing specifications for foreign CPUs to ensure their compatibility with Data General's software—may not be available insofar as the specifications would disclose Data General's trade secrets.[114] Another alternative —providing lesser warranties when software is licensed on an unbundled basis than when it is licensed for use with a Data General CPU—clearly is available. Data General already offers a sliding scale of warranties with its software. Software in "Category A" is fully serviced, while that in "Category C" is provided "as is." Data General explains that even under the latter warranty, it services the product and charges the customer on a time and materials basis.[115] Data General concedes that it is possible, though costly, to service its software when used in a hybrid system.[116] Such costs could simply be passed along to customers who choose an unbundled, lesser warranty option. Or Data General could decline to provide service for its software when used with foreign CPUs and customers could decide whether to avail themselves of the advantages of Data General's service support or devise a hybrid system and rely on

[113] Data General's factual assertion (b)(8) in response to plaintiffs' fact statement I,A,1 and responses (c)(5)-(9) in response to plaintiffs' fact statements III,C, 14-16.

[114] Supplemental Gaal affidavit ¶5.

[115] Gaal affidavit ¶¶9-10; plaintiffs' fact citations III-D tabs 1-3.

[116] De Castro affidavit ¶12(k); affidavit of Donnie W. Reed, Data General's manager of product support, ¶4.

independent service companies. There is no indication that Data General's existing use of lesser warranties has impaired its reputation and there is no factual basis for suspecting that use of limited warranties for unbundled software will have that effect. In addition, Data General's evidentiary submissions establish that at least one of its competitors has already employed a lesser warranty alternative[117] and another has endorsed its practical availability.[118] The gist of Data General's explanation for requiring all software licensees to use Data General's CPUs rather than permitting them the option of using Data General's software with foreign CPUs under a limited warranty is that, in the words of Data General's president, "that is simply not the way we want to do business."[119] Under the governing case law, that is simply not a legitimate justification for restraining competition.

The second of Data General's asserted justifications is that it must bundle its software together with its CPUs in order to recover its substantial investment in software research and development. The argument is that its software investment costs are high, customers expect software to be supplied at little or no cost, and investment costs can only be recovered by folding the sale of CPUs into the licensing of software.[120] Moreover, it would be unfair to permit emulator-CPU manufacturers to reap the benefits of Data General's software R&D when they sell their competing CPUs for use with Data General's underpriced software.[121]

The law precludes a jury finding in Data General's favor on the basis of this justification. Recovery of investment costs

[117] Borovoy deposition, quoted at Data General's evidentiary materials, tab 3 (re Intel).

[118] Sweet deposition, quoted at Data General's evidentiary materials, tab 145 (re Zilog).

[119] De Castro affidavit ¶12(j).

[120] Data General's responses (b) and (c) to plaintiffs' fact statements III,C,14-16.

[121] Data General's response (b) to plaintiffs' fact statements III,C,14-16; De Castro affidavit ¶¶11-12.

has been explicitly excluded from the narrowly-construed exceptions to the *per se* rule against tie-ins. In *United States v. Jerrold Electronics Corp., supra,* which came as close as any case to accepting this type of defense, the court rejected an argument nearly identical to that made here. Data General's president phrased his company's reason for bundling software with CPUs as follows:

> "In considering * * * the formulation of an overall [software] licensing policy, one of our most crucial concerns was that we needed an effective and feasible method to obtain adequate financial return for the heavy investment we had made and would need to keep making in integrated research, development, upgrading and post-sale support (including program debugging) of operating system software and hardware for our computers and computer systems. * * * [We] believed that if companies like DCC [Digital Computer Controls Co.], without any investment in or offering of operating system software, could sell purported 'emulating' computers for use by customers with NOVA operating system software, this would not only be unfair, but would also seriously jeopardize our ability to assure fair rewards and incentives for investment in software development, detracting from our ability to improve our computer systems. It would also mean that development of proprietary software would have been rendered useless because anyone who could develop an 'emulator' would obtain 'a free ride' on our proprietary software."[122]

The *Jerrold Electronics* court found that argument to be legally insufficient:

> "Jerrold felt that other companies who had not invested time and money into the development of satisfactory head-end equipment sought to take advantage of it by competing with it as to the amplifiers, but relying on Jerrold's head end equipment to make the system successful. Shapp resented these other companies 'picking our brains' and

[122] *Id.*, ¶12(e) and (g).

> competing for the real source of profit. Jerrold, therefore, felt justified in recovering its substantial investment in the development of superior head end equipment by using it to preserve for itself a share of the more lucrative market for amplifiers. While the court is sympathetic with Jerrold's predicament, it does not feel that it provides sufficient justification for the use of a tying arrangement. If the demand for Jerrold's equipment was so great, it could recover its investment by raising its prices. Admittedly, the return would not be as great, but it provides sufficient protection to serve as a more reasonable and less restrictive alternative to a tying arrangement." *United States v. Jerrold Electronics Corp., supra,* 187 F. Supp. at 560-61 (footnote omitted).

Data General has not shown, nor has it raised a genuine issue of fact with respect to its ability to show at trial, that it is any less capable than was Jerrold Electronics of adopting the less restrictive alternative of restructured prices in order to recoup its investment costs and maintain its incentives for further innovation.

Data General's third alleged justification is that the demands of the marketplace compel it to impose this restraint. Customers want to obtain all components of their computer systems from one company so as to hold that company responsible for the proper functioning of the system ("single vendor accountability") and to avoid "finger-pointing problems" that arise when a hybrid system malfunctions. Competitors restrict the use of their software to their own CPUs, employing one scheme or another. The implied conclusion is that, as a result of its customers' preferences and its competitors' practices, Data General has no choice but to bundle.[123]

This argument is essentially a paraphrased repackaging of the first and second asserted justifications. In light of the governing law and the undisputed facts in the record, it fares no

[123] *See, generally,* Data General's opposition brief at 58; Data General's responses to plaintiffs' fact statements I.A.1 and III.C.14-16.

better than the first two arguments. Data General can achieve the legitimate end of responding to the market's demands by employing means less restrictive than a tie-in. The record establishes beyond dispute that Data General could license its software under both bundled and unbundled-lesser warranty options.[124] Customers who desire single vendor accountability could choose the bundled option; those who prefer hybrid systems, and the record establishes that there are such customers,[125] could select the unbundled option. Data General need not pit the dictates of the marketplace against the mandate of the antitrust laws. The two interests can be simultaneously promoted by way of marketing practices less restrictive than tie-ins.

2

Data General realleges its good will and market response justifications in support of the CPU-memory tie-in.[126] Again the Court finds that, even if the jury were to accept Data General's evidentiary support, it would not be permitted to immunize Data General from antitrust liability on the basis of these alleged justifications. Again the record contains undisputed facts establishing that less restrictive alternatives are available.

First, Data General could offer CPUs without main memory under a lesser warranty than that accompanying a CPU-memory package. Insofar as Data General would feel a

[124] *See supra* nn.115-119 and accompanying text.

[125] *See* section II,D,1, *supra*.

[126] With respect to the good-will justification, *see* Data General's factual assertions (c)-(h) in response to Ampex' fact statement IV,B,9 (see also Data General's fact statements 117-22). With respect to the market response justification, *see* Data General's factual assertion (j) in response to Ampex' fact statement IV,B,9 (see also Data General's fact statement 124) and Data General's factual assertions in response to Ampex' fact statement IV,B,10 (see also Data General's fact statements 125-128).

continuing obligation to provide service for its CPU customers even under the limited warranty arrangement, it could pass along to such customers the higher costs of servicing hybrid, as opposed to single vendor, computer systems. The record is replete with statements establishing that Data General already services hybrid systems, notwithstanding the increased difficulty and expense involved.[127] Insofar as Data General might prefer to test its CPUs with its own memory boards before selling even an unbundled CPU,[128] the increased costs of removing the memory board after performing the requisite tests could also be passed along to those customers who prefer the unbundled option. Data General's senior vice president for worldwide sales marketing has underscored the practicability of this less restrictive alternative:

> "Q. Do you know why Data General switched from listing the separate prices in its price list for the CPU and initial memory, to combining it into a single price?
>
> A. If I remember correctly, at that point in time the testing procedures were such that we had to test the product as a system and we had to put the equipment together to be able to test it thoroughly with the diagnostics.
>
> I think that we found it more costly to disassemble the product again. We just figured that once we had it together, we might as well sell it that way."[129]

Second, Data General could provide specifications that foreign memory boards would have to meet in order to be used with Data General CPUs. The reason that Data General offers concerning the difficulty with this alternative is legally in-

[127] De Castro affidavit ¶12(k); affidavit of William G. Adams, Data General's regional sales manager, ¶¶10, 13; Reed affidavit ¶¶4-5.

[128] Data General's factual assertions (d)-(f) in response to Ampex' fact statement, IV,B,9 (see also Data General's fact statements 118-120, 123).

[129] Deposition of Herbert J. Richman, quoted at Data General's evidentiary materials, tab A-16,3.

sufficient. According to Data General's manager of systems integration engineering:

> "If the computer was shipped without main memory, the customer might choose a less than optimal scheme, which would degrade system performance. In such a case the system would never be able to meet benchmark specifications quoted by Data General."[130]

In other words, specifications are asserted to be impracticable because some customers might ignore them. Yet this risk is inherent in any specification system. The Supreme Court has necessarily rejected the notion that this risk amounts to "impracticability," as it repeatedly relies on the alternative of providing specifications in the course of dismissing alleged justifications for tie-ins. *See, e.g., Standard Oil Co. v. United States, supra,* 337 U.S at 306, 69 S. Ct. at 1058; *International Salt Co. v. United States, supra,* 332 U.S. at 397-98, 68 S. Ct. at 15; ***IBM*** *v. United States, supra,* 298 U.S. at 139-40, 56 S. Ct. at 705. Data General makes no showing that other manufacturers could not produce memory boards to comply with Data General's specifications or that Data General could not design appropriate specifications.

Data General's manager of systems integration engineering sums up the company's business justification for the memory tie-in as follows:

> "[T]he main memory is an essential element of a computer. Quality control, performance and reliability are all enhanced by designing, producing and marketing the computer with the main memory installed and tested with the entire system at the factory. Any other method of doing business would necessarily either compromise quality or entail additional costs."[131]

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[130] Affidavit of Howard V. Taylor, Data General's manager of systems integration engineering, ¶4.

[131] *Id.*, ¶8.

Yet the record establishes beyond dispute that Data General could maintain its quality standards by providing specifications for foreign memory boards and could address the cost problem either by passing along the higher costs to customers who choose unbundled CPUs, by providing limited warranties with unbundled CPUs, or both. Data General offers no evidence from which a jury would be permitted to find that legitimate business justifications save its CPU-memory tie-in from *per se* illegality.

V

Accordingly, the Court holds that genuine issues of material fact exist with respect to plaintiffs' claim that Data General has imposed unlawful tie-ins. The cross-motions for summary judgment must be and hereby are DENIED.

Pursuant to Rule 56(d) of the Federal Rules of Civil Procedure, the Court finds that the following material facts exist without substantial controversy:

1. Data General's operating systems software and its central processing units are separate products subject to a tie-in imposed by Data General's Program License Agreement.

2. Data General's central processing units and main memory boards are separate products subject to a tie-in imposed by Data General's minimum memory purchase requirement.

3. Data General's software-CPU tie-in affects a not insubstantial amount of commerce in the CPU market.

4. Data General's CPU-memory tie-in affects a not insubstantial amount of commerce in the memory market.

5. All plaintiffs except Data Compass have suffered actual injury of which a material cause was Data General's software-CPU tie-in.

6. Plaintiff Ampex has suffered actual injury of which a material cause was Data General's CPU-memory tie-in.

7. There are no legitimate business justifications for either the software-CPU tie-in or the CPU-memory tie-in because less restrictive alternatives are available.

The Court also finds that the following material facts are actually and in good faith controverted:

1. Whether Data General possesses sufficient economic power in the operating systems software market appreciably to restrain competition in the CPU market;

2. Whether Data General possesses sufficient economic power in the CPU market appreciably to restrain competition in the memory market; and

3. Whether Data Compass has been injured in fact by Data General's tie-in practices.

The parties must proceed to a jury trial to resolve the disputed facts and to determine the amount of damages to which plaintiffs may be entitled. Counsel are to meet and chart the course of additional pretrial proceedings, including (1) identification of issues to which proof at trial will be limited, (2) stipulations of fact, if possible, and (3) discovery to be conducted in preparation for trial. A status conference with the Court will be held on Friday, March 21, 1980, at 9:00 a.m.

FILED
August 14, 1984
Phillip B. Winberry
Clerk, U.S. Court of Appeals

APPENDIX D

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,
Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,
Defendant-Appellee.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,
Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,
Deferdant-Appellee.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,
Plaintiffs-Appellees,

v.

DATA GENERAL CORPORATION,
Defendant-Appellant.

DIGIDYNE CORPORATION, FAIRCHILD CAMERA AND INSTRUMENT CORPORATION,
Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,
Defendant-Appellee.

Nos. 81-4628, 81-4667, 81-4671 and 82-4162.

ORDER

Before: BROWNING, Chief Judge, PECK* and ALARCON, Circuit Judges.

The panel has voted to deny the petition for rehearing and to reject the suggestion for a rehearing en banc.

The full court has been advised of the suggestion for en banc rehearing, and no judge of the court has requested a vote on the suggestion for rehearing en banc. Fed. R. App. P. 35(b).

The petition for rehearing is denied and the suggestion for a rehearing en banc is rejected.

* Honorable John W. Peck, Senior Judge, United States Court of Appeals for the Sixth Circuit, sitting by designation.

APPENDIX E

IN THE
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

Nos. 82-4162, 81-4628, 81-4667, 81-4671

DIGIDYNE CORPORATION, ET AL.,

Plaintiffs-Appellants,

v.

DATA GENERAL CORPORATION,

Defendant-Appellee.

ON APPEAL FROM THE
UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF CALIFORNIA

BRIEF FOR THE UNITED STATES OF AMERICA
AS AMICUS CURIAE IN SUPPORT OF
PETITION FOR REHEARING AND
SUGGESTION OF REHEARING *EN BANC*

INTEREST OF THE UNITED STATES

The United States has primary responsibility for the enforcement of the federal antitrust laws, and therefore has a substantial interest in ensuring that the Sherman Act is applied in a manner that promotes competition. Consequently, it has a substantial interest in ensuring that those laws are interpreted and applied in a manner that promotes competition and enhances consumer welfare. The United States believes that

the panel decision in this case applied an erroneous legal standard and, as a result, created a precedent that will interfere with efficient, procompetitive business policies. Accordingly, the United States respectfully urges this Court to grant the petition for rehearing and the suggestion for rehearing *en banc* filed in this case.

IMPORTANCE OF REHEARING

While the panel decision in this case purports to apply the Supreme Court's recent decision in *Jefferson Parish Hospital District No. 2 v. Hyde,* 104 S. Ct. 1551 (Mar. 27, 1984) *("Hyde"),* its *per se* treatment of the packaged sale at issue in this case is plainly contrary to the rationale and holding of *Hyde. Hyde* expressly held that packaged sales are not inherently anticompetitive and may simply reflect a seller's "attempt to compete effectively—conduct that is entirely consistent with the Sherman Act." *Id.* at 1558. Thus, the lawfulness of a packaged sales policy can be determined only after a careful examination of the market or markets in which the separate elements of the "package" are sold. Indeed, even though patients in *Hyde* were forced to purchase "two services that would otherwise be purchased separately," *id.* at 1565, the Court concluded that the packaged sale was not unlawful because an analysis of actual market conditions revealed that competitive alternatives were available. *Id.* at 1566-1567.

In contrast, the panel decision in this case applied the *per se* rule to a packaged sale involving computer software and hardware without engaging in the economic analysis required by *Hyde.* Indeed, the panel stated that such market analysis was not required. Op. at 10. Rather, under the panel's approach to packaged sales, a *per se* violation of the Sherman Act occurs whenever a seller imposes a packaged sales policy on an "appreciable number" of its customers, irrespective of whether such a policy has any adverse competitive effects. *Id.*

The panel's analysis of packaged sales simply cannot be reconciled with *Hyde's* recognition that market analysis is

always required. Unless rehearing is granted, the panel decision could be invoked in other cases to condemn as a *per se* illegal tying arrangement a packaged sale that in fact is procompetitive or is competitively neutral. While we take no position on whether the packaged sale at issue in this case violates the Sherman Act, the panel's misinterpretation of *Hyde* warrants rehearing by this Court.

ARGUMENT

THE LEGAL STANDARD ENUNCIATED BY THE PANEL IGNORES THE FACTOR THE SUPREME COURT HELD IN *HYDE* WAS CRUCIAL TO *PER SE* ILLEGALITY—MARKET POWER IN THE TYING PRODUCT MARKET

The panel held that Data General's refusal to license its NOVA operating system software (RDOS) except to buyers of its NOVA central processing units was a *per se* violation of Section 1 of the Sherman Act, 15 U.S.C. 1, and Section 3 of the Clayton Act, 15 U.S.C. 14. In arriving at this conclusion, the panel interpreted *Hyde* to hold "that a tying arrangement is illegal *per se* if the seller of the tying product has the capacity to force some buyers to purchase a tied product they do not want or would have preferred to purchase elsewhere." Op. at 9. See also Op. at 22-23. Thus, the panel did not review the record "for what it may reveal as to [Data General's] position in a defined market in which" Data General's software was sold. Op. at 10. Rather, it merely determined that "the jury reasonably could have concluded [that Data General's software] was sufficiently unique and desirable to an appreciable number of buyers to enable [Data General] to force those buyers also to buy a substantial volume" of Data General's central processing units that they otherwise would not have bought. *Id.* For this reason, it condemned as *per se* illegal the packaged sale at issue in this case.

The panel's decision not to consider evidence of Data General's power in the relevant market simply ignores the holding and rationale of *Hyde*.

1. *Hyde* held that a hospital's policy of requiring every patient undergoing surgery to use the services of a group of anesthesiologists with which the hospital had an exclusive contractual arrangement was not illegal *per se*. In reaching this conclusion, the Court proceeded from a well established premise: not "every refusal to sell two products separately . . . restrain[s] competition." 104 S. Ct. at 1558.[1] Indeed, "tying may have procompetitive justifications that make it inappropriate to condemn without considerable market analysis." *National Collegiate Athletic Association v. Board of Regents of the University of Oklahoma,* 52 U.S.L.W. 4928, 4933 n.26 (U.S. June 27, 1984). For this reason, "any inquiry into the validity of a tying arrangement must focus on the market or markets in which the two products are sold." *Hyde,* 104 S. Ct. at 1561. Because the propriety of a *per se* approach turns on "the probability of anticompetitive consequences," *id.* at 1560, *per se* condemnation is appropriate only where "anticompetitive forcing is likely." *Id.* at 1560. Anticompetitive forcing is in turn possible only where a "seller has some special ability — usually called 'market power'—to force a purchaser to do something that he would not do in a competitive market." *Id.* at 1559. If the seller of the package has no market power, then the availability of competitive alternatives prevents the buyer from being "forced" — i.e., the package is purchased because its purchasers find it more desirable than the components sold either independently or as packaged by the seller's competitors.

[1] The Court has long recognized that "where the seller has no control or dominance over the tying product so that it does not represent an effectual weapon to pressure buyers into taking the tied item any restraint of trade attributable to such tying arrangements would obviously be insignificant at most." *Northern Pacific Ry. v. United States,* 356 U.S. 1, 6 (1958).

The panel's decision, however, eliminates the need to prove market power to establish anticompetitive forcing.[2] Instead, under the logic of the court's analysis, where "some buyers" find the tying product "unique and desirable" (as opposed to perfectly fungible with products made by other producers), the purchase of the package would constitute forcing. But such an analysis, by eviscerating the market power requirement of traditional tying case law, is clearly contrary to the central teaching of *Hyde*.

The panel's decision ignores the fact that the significant benefits of a competitive market economy appear not just in the form of low prices but also in the form of a wide variety of goods and services. The market provides the incentives for producers to meet the varied demands of a multitude of different consumers. For example, a number of producers may sell competing goods that perform the same general function. However, each producer's good may be slightly different and so satisfy a particular group of consumers (e.g., different groups of consumers may have different demands for quality). And the consumers of each producer's good would find that good unique and desirable relative to the other competing goods.[3] But in the absence of market power, an individual seller's attempt to raise price above cost (or "to require purchasers to accept burdensome terms", *United States Steel Corp. v. Fortner Enterprises, Inc.,* 429 U.S. 610, 620 (1977) (*Fortner II*)) would cause a sufficient number of purchasers to change their opinion as to the unique desirability of that product and to switch to the alternatives so that the attempt would be unprofitable. Even though some purchasers would undoubtedly

[2] The panel apparently concluded that definition of a relevant market and consideration of market shares is appropriate only in monopolization cases under Section 2 of the Sherman Act. Op. at 7. The Supreme Court repeatedly emphasized in *Hyde,* however, the importance of market share to a determination with respect to market power in the tying product market. 104 S. Ct. at 1567-1568.

[3] Except for the small fraction of a seller's customers who are truly indifferent as between the seller's product and competitive offerings, all of the other customers will find the product uniquely desirable.

continue to purchase the seller's product at the higher price, the loss in total sales from the switch would offset the higher price on remaining sales. In short, goods may be unique and desirable yet have no market power. Indeed, this is an accurate description of a very large percentage of the competitive markets that actually exist in today's economy. Under the rationale of the panel decision, however, packaged sales involving such "unique and desirable," albeit competitive, goods would be illegal *per se* so long as a substantial volume of the package is sold.

Therefore, the fact that the tying product is unique and desirable to purchasers who acquiesce in the tie is not determinative of the question whether a tie is illegal *per se*.[4] Rather, "the appropriate inquiry" requires a court examining a packaged sale to determine whether the seller possesses "market power" in the tying product market, because in the absence of such power there simply can be no anticompetitive forcing and thus no adverse effect on competition in the tied product market. As noted in *Hyde*, " [i]f each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market." *Id.* at 1558.

Indeed, the issue of tying product market power proved decisive in *Hyde*. As the Court framed the issue (104 S. Ct. at 1565):

> Only if patients are forced to purchase [the tied product] as a result of the hospital's market power [over the tying product] would the arrangement have anticompetitive consequences. If no forcing is present, patients are free to enter a competing hospital and to use another anesthesiologist.

[4] If a seller lacks power over the tying product, the fact that an "appreciable" number of buyers acquiesce in the tie proves only that the terms offered by a particular seller for the combination of the tying and tied products are more attractive to the buyer than the terms on which the products are offered separately. A buyer's objection to the tie proves only that the buyer would prefer to purchase the tying product on even more attractive terms. But as long as the buyers are free to purchase elsewhere, the fact that they would prefer terms different from that which they have accepted is of no competitive significance.

The Court concluded that the hospital's 30% market share did "not establish the kind of dominant market position that obviates the need for further inquiry into actual competitive conditions." *Id.* at 1566. Moreover, the Court observed that patients could elect to go to competing hospitals employing other anesthesiologists. Thus, the hospital's packaged sales policy was not anticompetitive.

2. By focusing almost exclusively on whether an appreciable number of buyers found RDOS unique and desirable and so were "forced" to purchase Data General's central processing units, and by declining to review Data General's "position in a defined market in which" Data General's software was sold, (Op. at 10) the panel simply ignored the central teaching of *Hyde*. Before applying the *per se* rule to the packaged sale at issue in this case, the panel should have considered Data General's position in the relevant product markets[5] and any other evidence of Data General's market power. Rehearing is required in order to enable this Court to assess the lawfulness of the packaged sale at issue in this case under the correct legal standard.

3. The panel's conclusion that Data General's policy resulted in anticompetitive forcing was based at least in part on the fact that the tying product was protected by a copyright

[5] The jury defined "the relevant tied product market as consisting of all general purpose minicomputers and microprocessors, and . . . the relevant tying product market as consisting of all the operating systems software which will run on such minicomputers and microprocessors. . . ." *In re Data General Corp. Antitrust Litigation*, 529 F. Supp. 801, 813 (N.D. Cal. 1981). The evidence in this case established that, at most, Data General's share of the minicomputer market amounted to approximately 14%. The plaintiffs introduced no evidence bearing specifically on Data General's share of the operating systems software market.

(Op. at 19) and by what the panel characterized as customer "lock-in" (Op. at 14). Neither factor, however, warrants *per se* condemnation of the packaged sale at issue in this case without additional market analysis.

a. The panel assumed that the mere existence of a copyright on computer software creates a presumption of market power[6] and deemed it irrelevant that substitutes for the defendant's operating software were available.[7] This refusal to consider the availability of competitive alternatives runs counter to the holdings in *Hyde* and *Fortner II* and cannot be justified on the ground that RDOS enjoyed copyright protection.

A copyright merely enables its holder to prevent others from reproducing the copyrighted work; this protection extends only to particular expressions of concepts in the copyrighted work, and not to the concepts themselves. And in general there are many ways to express a given concept. Moreover, a given concept may compete with other concepts. Furthermore, as this Court recognized in *Apple Computer, Inc. v. Formula International Inc.*, 725 F.2d 521, 525 (9th Cir. 1984), a computer program that embodies "the only and essential means of accomplishing a given task" is not entitled to copyright protection,[8] so that software that is the *only* possible expression of a

[6] A patented or copyrighted article rarely in economic terms is a market unto itself; in most cases such articles have close substitutes that preclude the exercise of any significant degree of market power by the holder of the patent or copyright. As a result, it should not be assumed that a patent or copyright confers market power. *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172, 177-178 (1965).

[7] In fact, the panel indicated that the fact that there may have been competing copyrights *enhanced* the adverse competitive impact of the tie. See Op. at 20-21.

[8] The Court was here quoting the National Commission on New Technological Uses of Copyright Works (CONTU) Report. CONTU was established "by Congress to consider, *inter alia*, to what extent computer programs should be protected by copyright law," and Congress "accepted the CONTU majority's recommended statutory changes verbatim." *Apple Computer*, 725 F.2d at 524.

concept is not entitled to copyright protection. Thus, copyright protection does not prevent competitors from offering products that perform precisely the same function as the copyrighted product, and copyrighted software must therefore compete with existing and future products that perform the same or similar functions. Accordingly, the fact that RDOS is copyrighted does not establish that it is, as the panel believed, unique as a matter of law; rather the market power of a copyrighted product can be determined only by analyzing the extent and significance of competing products. This the panel decision failed to do.

b. The panel also relied on the fact that several of the defendant's customers in this case were "locked-in" to the tying product by virtue of having made substantial investments in applications software designed to work exclusively with the tying product. In the panel's view, "[d]efendant's initial leverage is magnified by the lock-in," Op. at 14, and this ostensible augmentation of power made the packaged sales policy all the more deserving of *per se* condemnation. But even assuming that a "lock-in" makes existing customers less likely to switch to a competing operating system, this does not mean that Data General was able to or actually did exercise market power against the "locked-in" customers.

First, the panel's decision fails to consider that before potential purchasers of RDOS make an investment in developing a software program they should be able to foresee the threat from being locked in. Those potential customers would have a strong incentive to ensure, through, for example, long term contracts, that the operations software producer (e.g., Data General) they choose to patronize will not exploit the situation. Moreover, so long as the producer of the operating software wishes to attract new customers, it has a strong incentive not to exploit its locked-in customers because new customers would avoid a producer of software with a reputation for exploitation. Therefore, competition for new customers would restrain a producer's ability to exploit locked-in customers.

Second, even assuming new customers do not seek protection from the threat of lock-in, competition for new customers still may serve to restrain Data General's exploitation of locked-in customers. To the extent that Data General sought to impose burdensome terms and did not discriminate between new and locked-in customers, new customers generally would be free to turn to competitive alternatives. As a result, new sales would have to be sacrified if locked-in customers were to be anticompetitively forced. Moreover, because many of the purchasers of RDOS resold the software in competitive markets, an increase in price for RDOS (through burdensome tying terms) would reduce the demand at resale and so would force even the locked-in customers to reduce their purchases of RDOS. If the district court's analysis of discrimination and competition for new customers was correct, and the panel decision did not suggest otherwise,[9] then the mere fact that many of Data General's customers were "locked-in" is not evidence of its market power.

CONCLUSION

The petition for rehearing and the suggestion for rehearing *en banc* should be granted.

Respectfully submitted.

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[9] While the panel decision did not dispute the district court's holding that Data General competed for new customers and priced competitively, it viewed this holding as irrelevant for essentially the same reasons that it declined to examine Data General's market power. Op. at 23-24. We have already explained why the panel's refusal to examine Data General's market power was erroneous. Therefore, the reasons given by the panel for disregarding the district court's holding with respect to lock-in customers were erroneous.